

4.4 Distribution and Agricultural Produce Processing

4.4.1 Distribution

(1) Development Target

(a) Role of distribution

From the aspects of production and consumption, agricultural produce is characterized by the following:

(i) Production:

- 1) Various kinds of agricultural produce are produced by small farmers scattered all over the country,
- 2) Produce is generally not suitable for storage and more difficult than industrial products to standardize, and
- 3) Planned production is difficult because crops are sensitive to natural conditions such as weather, water availability, etc.

(ii) Consumption:

- 1) Consumers require stable and daily supplies of small amounts of a variety of fresh agricultural produce, and
- 2) Consumers normally purchase produce at nearby retailers, etc.

The role of distribution is to connect production and consumption in a way acceptable to both producers and consumers. The function of distribution can be categorized as follows:

- physical distribution which collects various agricultural produce at numerous locations, and delivers the same to retailers after classifying and packing and

- price determination to maintain well-balanced relationships between supply and demand.

The role of distribution will become more vital in the future as agricultural production increases and greater quantities of fresh food are shipped from production sites.

(b) Present condition of the distribution system in Oman

One of the problems in the distribution structure in Oman is the fact that the price determination system does not function well enough to meet the balance of supply and demand. In order for this function to work fairly, it is strongly recommended that wholesale markets be established where the distribution function and price formation function operate under certain rules.

In Oman, there is no adequate wholesale market at present. In order to provide a stable supply of food for the nation, the wholesale market, in general, must supply the producers with a stable and dependable place for selling their agricultural produce and supply retailers, etc., with a stable place for purchasing it. Accordingly, the establishment of a wholesale market is indispensable for the distribution policy in Oman. However, a drastic change in that structure will cause confusion in the distribution of agricultural produce. It is important that the government formulate and carry out the policy paying particular attention to step-by-step development and the co-existence of the local market distribution system and the main channel distribution system to main consumption sites.

Secondly, low-level organizations for collection and delivery have not been adequately developed in Oman. Systematic collection and shipment at 18 distribution and/or collection centers in the country are only carried out by PAMAP, and such distribution volume was less than 10% of the whole production of agricultural produce in 1988. With regards to private shipments, the produce is shipped without any plan, communication, or thought about the relationship between

products scheduled for shipment. Moreover, each shipment is quite small and the grade of the produce varies significantly due to the absence of appropriate standardization criteria.

Such circumstances make it difficult to carry out planned shipments which reflect the trends of demand, and to provide consumers with a stable supply of agricultural produce. Accordingly, it is necessary to promote distribution efficiency of main distribution channels and strengthen shipping organizations for farmers.

Thirdly, the statistical information for adjusting the relationship between demand and consumption has not been satisfactorily compiled; although some data are available, such as the statistics regarding production of agricultural produce from MAF, the distribution of agricultural produce from PAMAP, and imported and exported agricultural produce from ROP. But the statistical data for consumption and adjustment between supply and demand are not available.

Accordingly, statistical information which will clarify the present situation with regard to production, distribution and consumption is urgently required. Based on this information, the future demand for agricultural produce should be forecast. It is imperative to produce and supply agricultural produce consistently by referring to the planted crops and their areas, as well as to the date for planting and harvesting.

(c) Basic course to follow towards future distribution

Since agricultural produce is essential for everyday life, price stability, promotion of distribution efficiency, and a stable supply of products are inevitable issues. Along with these issues, the improvement of the existing distribution system, particularly in the following areas, is most essential:

- to establish a wholesale market which contributes to the

formation of fair wholesale prices and to the smooth circulation of agricultural produce, according to the increase in agricultural production for the next 10 years,

- to promote well-balanced supply and demand relationships based on the improvement of the existing statistical information system, with respect to production, distribution and consumption,
- to promote distribution efficiency in main distribution channels to main consumption center sites, and
- to strengthen low-level shipping organizations for farmers.

(d) Role of PAMAP

PAMAP was established for the following reasons:

- to encourage the Omani farmers to increase their production of fruits, vegetables and other agricultural crops by creating a body to market such products,
- to ensure the availability of such products in the local market, in the required quantities, and at reasonable prices.

In Oman, as well as in public distribution organizations like PAMAP, various private wholesale traders actively participate in distribution services. In order to achieve a favorable co-existence between PAMAP and the private traders, without discouraging private activities, they need to cooperate with each other and to supplement each others' functions.

With the increase of agricultural production and the amount of agricultural products entering the market, it becomes necessary to clearly delineate the roles of the private and public sectors.

Under its current national development planning, the Oman

Government has included stimulation of private sector participation in economic activity as a basic policy. The role of the private sector is particularly important in the case of distribution. However, policy in this regard must strive for balance between the inherently conflicting interests of the producer pursuing profit on the retail level and therefore, seeking to sell at the highest price possible, and the consumer seeking to purchase at the lowest price possible.

In this regard, government policy must seek a well-balanced development of the distribution sector connecting the producer of agricultural products with the consumer. This will require coordination of the public agencies participating in the sector, and creation of new organizations where necessary.

Table 4.4.1 depicts the roles of the public and private sectors in distribution as well as a development schedule for the sectors.

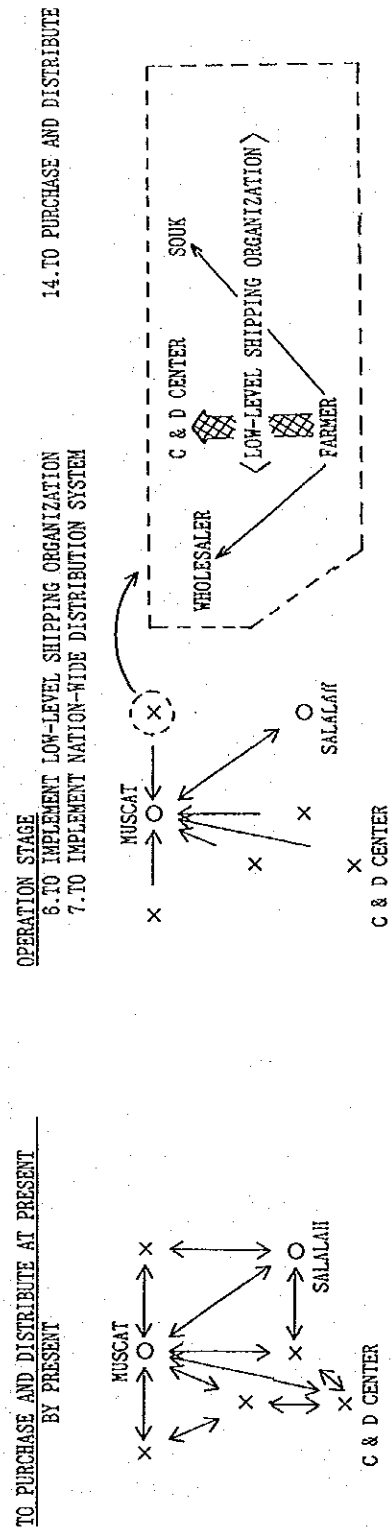
The current duties of PAMAP are essentially the same as the private wholesalers, except PAMAP does not seek a profit. However, an expansion of PAMAP activities in the future will require corresponding strengthening and expansion of its facility, staff and budget resources. A growing potential for friction with the private sector also emerges.

In general, there are relatively inefficient aspects of personnel arrangement and financing, inherent in a public distribution organization. However, it has at the same time the capacity to provide satisfactory, beneficial services. Thus, PAMAP will be able to play an important role, particularly in the following areas:

- constructing, supervising, and operating and/or supporting the wholesale market,
- upgrading the collection and distribution system of main channels according to the increase in agricultural production,

Table 4.4.1 Future Role of Organization Concerning Distribution Sector

ORGANIZATION	ROLE	PRESENT 1990	INTRODUCTION STAGE 1991-1994	CONSTRUCTION STAGE 1995-2000	OPERATION STAGE 2001-
PUBLIC SECTOR	1. TO PURCHASE AND DISTRIBUTE	○	○ (EXPANSION WITH DECREE)	△	△ (ON CONSIGNMENT OR PURCHASE)
	2. TO SELL	○	○ (EXPANSION WITH DECREE)	△	△ (PILOT PROJECT)
	3. TO PROCESS	○	△ (PILOT PROJECT)	○ (PRODUCE & LIVESTOCK)	○ (PRODUCE & LIVESTOCK)
	4. TO ISSUE IMPORT PERMITS	○	○ (PRODUCE & LIVESTOCK)	○	○ (PRODUCE & LIVESTOCK)
	5. TO SUPERVISE AND SUPPORT W/M OR OPERATE W/M *	○	○ (STUDY, PILOT, ANNOUNCE & TRAIN)	○ (CONSTRUCTION & OPERATE)	○ (AUCTION OR NEGOTIATED MARKET)
	6. TO ASSIST LOW-LEVEL SHIPPING ORGANIZATION	○	○ (PRODUCE & EGGS)	○	○ (PRODUCE & EGGS)
	7. TO IMPLEMENT NATION-WIDE DISTRIBUTION SYSTEM	○	○	○	○
	8. TO PROMOTE BALANCE	○	○	○	○
	9. TO IMPLEMENT PRICING POLICY	○	○	○	○
	10. TO MAKE STRATEGY	○	○	○	○
	11. TO COORDINATE AMONG ORGANIZATIONS CONCERNED	○	○	○	○
	12. TO CONDUCT NUTRITION SURVEY	○	○	○	○
	13. TO CONSTRUCT RETAIL MARKETS	○	○	○	○
	14. TO PURCHASE AND DISTRIBUTE	○	○	○	○
	15. TO SELL	○	○	○	○
	16. TO PROCESS	○	○	○	○
	17. TO IMPORT AND EXPORT	○	○	○	○
	18. TO OPERATE W/M *	○	△	△	△ (AUCTION OR NEGOTIATED MARKET)
PRIVATE SECTOR					



and

- strengthening shipping organizations for farmers according to the increase in distribution.

Table 4.4.2 shows the present and future role of PAMAP.

Figure 4.4.1 shows PAMAP's future organization structure in 2000.

(e) Development Target Values

As indicated in Chapter 2 (Prospects for Demand and Production of Agricultural Products) of Volume 5, production of vegetables and fruits (excluding dates) by 1995 will have increased 50% over production in 1988, and 80% by 2000. Corresponding increases in consumption by 1995 and 2000 over that in 1988 will be by 38% and 62% respectively.

Total agricultural product volume handled by PAMAP in 1988 was 18,000 tons, or 8% of the total. As can be seen, the bulk of distribution is carried out in the private sector.

In the future as production and consumption both continue to grow, it will be necessary to expand the administration role of the public sector in distribution to establish an efficient structure that balances producer and consumer interests.

By 2010, over half the population of the Sultanate will be concentrated in the 6 urban centers of Muscat, Salalah, Sohar, Sur, Nizwa and Ibri. It will be particularly necessary to establish requisite distribution facilities for efficient flow of products into these areas. In Annex Table 4.4.1, locations for wholesale markets, major distribution facilities and farmer level collection and shipment organizations are examined. Effective distribution will require that the projects for the foregoing focus on properly connecting to the above-mentioned major population centers.

Study of appropriate wholesale market format, training of staff,

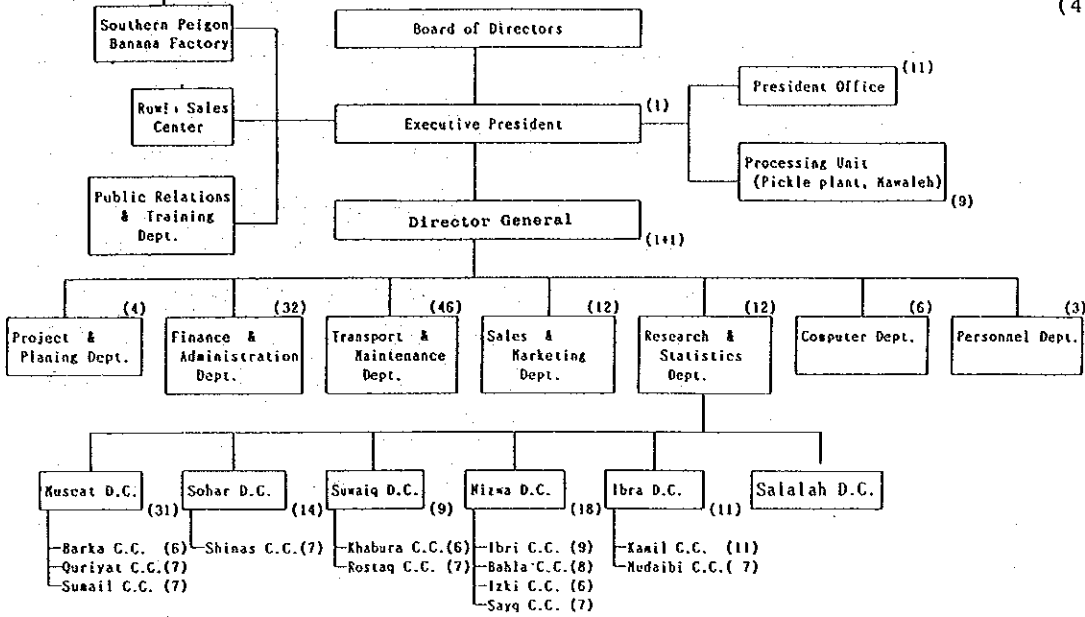
Table 4.4.2 Future Role of PAMAP

ITEM	PRESENT	FUTURE	REMARKS																				
1. DEVELOPMENT TARGET		<p>TO CONNECT PRODUCTION AND CONSUMPTION IN A WAY ACCEPTABLE TO BOTH PRODUCERS AND CONSUMERS</p> <p>TARGET FIGURE</p> <table border="1" data-bbox="406 470 558 1176"> <tr> <td>YEAR</td> <td>1988</td> <td>1955</td> <td>2000</td> </tr> <tr> <td>PRODUCTION AMOUNT</td> <td>212804</td> <td>322383</td> <td>378016</td> </tr> <tr> <td>DISTRIBUTION VOLUME IN PAMAP</td> <td>17669</td> <td>33686</td> <td>94504</td> </tr> <tr> <td>SHARE OF PAMAP</td> <td>8%</td> <td>12%</td> <td>25%</td> </tr> <tr> <td>INCREASE IN PAMAP</td> <td>100%</td> <td>219%</td> <td>535%</td> </tr> </table>	YEAR	1988	1955	2000	PRODUCTION AMOUNT	212804	322383	378016	DISTRIBUTION VOLUME IN PAMAP	17669	33686	94504	SHARE OF PAMAP	8%	12%	25%	INCREASE IN PAMAP	100%	219%	535%	
YEAR	1988	1955	2000																				
PRODUCTION AMOUNT	212804	322383	378016																				
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SHARE OF PAMAP	8%	12%	25%																				
INCREASE IN PAMAP	100%	219%	535%																				
2. OBJECTIVES	<p>1) TO ENCOURAGE THE OMANI FARMERS TO INCREASE THEIR PRODUCTION OF FRUITS, VEGETABLES AND OTHER AGRICULTURAL CROPS BY CREATING A BODY TO MARKET SUCH PRODUCTS</p> <p>2) TO ENSURE THE AVAILABILITY OF SUCH PRODUCTS IN THE LOCAL MARKET, IN THE REQUIRED QUANTITIES AND AT REASONABLE PRICES</p>	<p>1) TO FORM PRICE DETERMINATION AND PHYSICAL DISTRIBUTION THROUGH THE WHOLESALE MARKET</p> <p>2) TO PROMOTE WELL-BALANCED SUPPLY AND DEMAND RELATIONSHIPS</p> <p>3) TO PROMOTE DISTRIBUTION EFFICIENCY OF NATION-WIDE DISTRIBUTION SYSTEM</p> <p>4) TO STRENGTHEN FARMER-LEVEL SHIPPING ORGANIZATIONS</p>																					
3. ROLE	<p>1) TO PURCHASE AGRICULTURAL PRODUCE BROUGHT INTO CENTERS BY THE FARMERS AND TO DISTRIBUTE IT TO THE CONSUMER AREA</p> <p>2) TO SELL PRODUCE THROUGH EACH CENTER</p> <p>3) MANAGE AGRICULTURAL PROCESSING FACILITIES</p> <p>4) TO ISSUE IMPORT PERMITS FOR AGRICULTURAL PRODUCE TO TRADERS</p>	<p>1) TO PURCHASE AGRICULTURAL PRODUCE AND EGGS BROUGHT INTO CENTERS BY FARMER-LEVEL SHIPPING ORGANIZATIONS AND FARMERS ON CONSIGNMENT OR PURCHASING BASIS AND TO DISTRIBUTE IT TO MUSCAT AND SALALAH AS MAIN CONSUMER AREAS THROUGH NATION-WIDE DISTRIBUTION SYSTEM</p> <p>2) TO MANAGE PILOT AGRICULTURAL PROCESSING PROJECTS</p> <p>3) TO ISSUE IMPORT PERMITS FOR AGRICULTURAL PRODUCE AND LIVESTOCK TO TRADERS ACCORDING TO PROSPECTS FOR DEMAND AND SUPPLY</p> <p>4) TO SUPERVISE AND SUPPORT THE WHOLESALE MARKET OR OPERATE THE WHOLESALE MARKET WHICH CONTRIBUTES TO THE FORMATION OF PRICE DETERMINATION AND PHYSICAL DISTRIBUTION</p> <p>5) TO FORM, TRAIN AND ASSIST FARMER-LEVEL SHIPPING ORGANIZATIONS</p> <p>6) TO PROMOTE WELL-BALANCED SUPPLY AND DEMAND RELATIONSHIP THROUGH VARIOUS COUNTERMEASURES</p> <p>7) TO IMPLEMENT PRICING POLICY FOR AGRICULTURAL PRODUCE</p>																					

PAMAP ORGANIZATION

PRESENT PAMAP ORGANIZATIONAL STRUCTURE

Number of Staff
in June 1990
(414)



FUTURE PAMAP ORGANIZATIONAL STRUCTURE

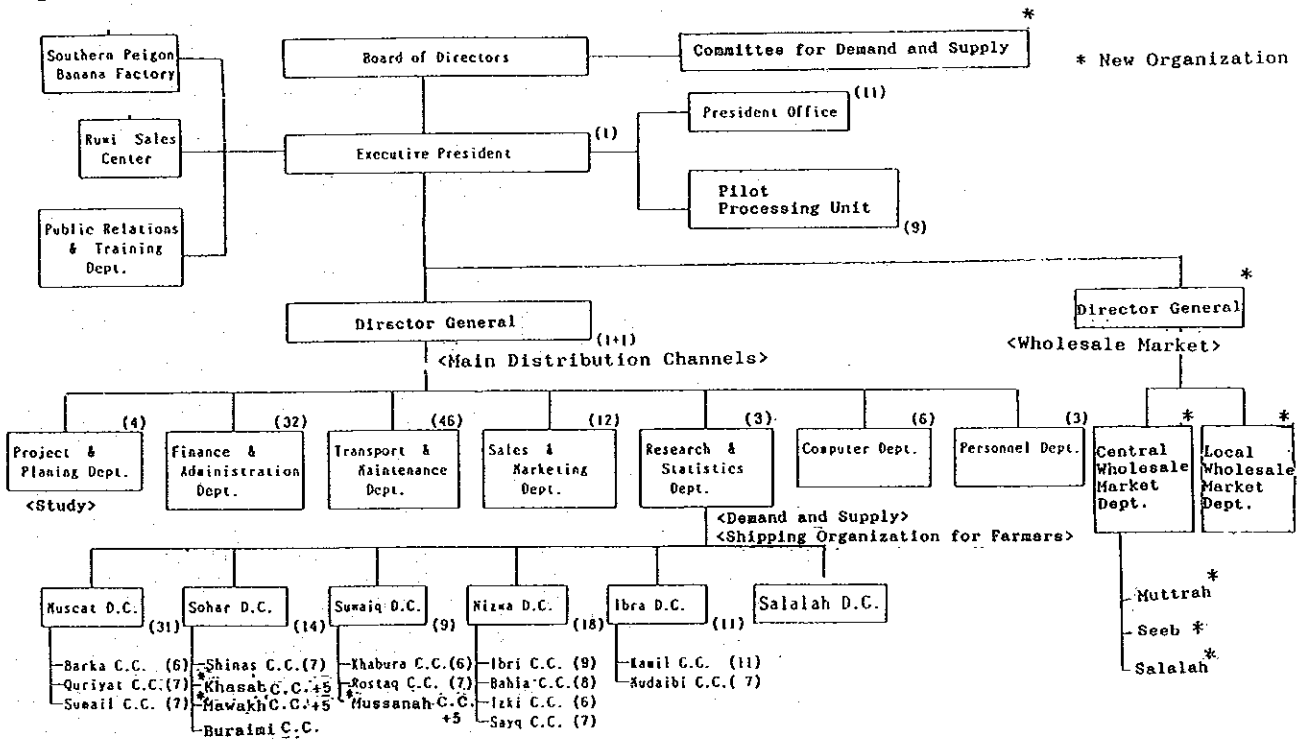


Figure 4.4.1 PAMAP Future Organizational Structure in 2000

public notification about markets, etc. must be performed to establish wholesale markets given the lack of Omani experience in this area. Rushing must be avoided.

A target by 2010 of 50% handling of all agricultural produce by wholesale markets was studied. Table 4.4.3 shows the market scale for each urban center. The study of the scale for local wholesale markets is as shown in Table 5.2.8. The total planned amount of agricultural products to be handled in the wholesale markets in the 6 cities by 2000 is 94,000 tons (see Table 4.4.4). This would be 25% of total agricultural product volume (see Table 4.4.5). These are considered appropriate targets for the envisioned modernization of the distribution system in Oman over the next 10 years.

(2) Development Strategy

A conceptual sketch for the development target and the strategy for the distribution sector are depicted in Figure 4.4.2.

(a) Establishment of the wholesale market

The staged development approach should be employed to smoothly transform the present distribution system into the expected future system, which will operate through the wholesale market. This market should be established on the premise that various kinds of agricultural produce are collected from numerous production sites in the country. The methods of collection can be classified as follows:

- low-level shipment, or short-distance transportation from farm-gate to town, and
- Nation-wide distribution, or long-distance transportation from towns to urban areas as main distribution channels.

The improvement of both of the above is quite essential for the physical distribution of agricultural produce in the market. The wholesale market should be established gradually, through the

Table 4.4.3 Establishment of Wholesale Market

REGION TOWN	MUSCAT		JANUBIYA		BATINAH		SHARQIYA		DAKILIYA		DHAHIRA		TOTAL
	MUTTRAH	SEEB	SALALAH	SEEB	SOHAR	RUSTAQ	SUR	IBRA	NIZWA	SAMAIL	IBRI	BURAIMI	
POPULATION	248,000	174,000	190,000	143,000	143,000	101,000	128,000	44,000	126,000	88,000	175,000	93,000	1,510,000
VOLUME PER DAY (TONS)	179	126	137	126	126	91	91	32	64	64	126	64	
WHOLESALE MARKET													
BUILDING AREA (m ²)	6,185	4,523	4,862	4,523	4,523	3,278	3,278	1,334	3,278	2,412	4,523	2,412	40,608
PARKING AREA (m ²)	7,500	5,500	5,750	5,500	5,500	4,000	4,000	1,750	4,000	3,000	5,500	3,000	42,000
SITE (m ²)	30,000	22,000	23,000	22,000	22,000	16,000	16,000	6,800	16,000	12,000	22,000	12,000	167,800
CONSTRUCTION YEAR	1,995	1,997	1,997	1,998	1,998	2,002	2,002	2,002	2,002	2,002	1,998	2,002	
COST (1000 R.O.)	2,527	1,845	1,979	1,844	1,844	1,339	1,339	551	1,339	989	1,844	989	16,585

Table 4.4.4 Dealing Volume in Wholesale Market in 2000

	POPULATION NUMBER	
CENTRAL W/M 3 PLACES (MUTTRAH, SEEB, SALALAH)	612,000	29%
REGIONAL W/M 4 PLACES (SOHAR, SUR, NIZWA, IBRI)	572,000	27%
(TOTAL POPULATION IN OMAN IN 2000 : 214,6000)		
RATIO VIA W/M	50 %	67 %
	50 %	100 %
TOTAL DEALING VOLUME IN W/M (TON)		
	94,000	124,000
	*	**

Table 4.4.5 Distribution Volume by PAMAP

ITEM	1988	1995	2000	REMARKS
	ACTUAL	PROSPECT		
	(4)	(5)	(6)	
# ALTERNATIVE-1	17,669	38,686	94,504	*
RATIO FOR				
PAMAP/PROD.	8%	12%	25%	
INCREASE IN PAMAP	100%	219%	535%	
ALTERNATIVE-2	17,669	51,581	124,745	**
RATIO FOR				
PAMAP/PROD.	8%	16%	33%	
INCREASE IN PAMAP	100%	292%	706%	
ALTERNATIVE-3	17,669	80,596	189,008	***
RATIO FOR				
PAMAP/PROD.	8%	25%	50%	
INCREASE IN PAMAP	100%	456%	1070%	
ALTERNATIVE-4	17,669	128,953	283,512	
RATIO FOR				
PAMAP/PROD.	8%	40%	75%	
INCREASE IN PAMAP	100%	730%	1605%	
ALTERNATIVE-5	17,669	161,192	283,512	
RATIO FOR				
PAMAP/PROD.	8%	50%	75%	
INCREASE IN PAMAP	100%	912%	1605%	

Table 4.4.6 Production Amount

ITEM	1988	1995	2000
	ACTUAL	PROSPECT	
	(1)	(2)	(3)
1. VEGETABLES	133,909	172,950	204,005
2. TUBERS	5,900	19,382	22,754
3. FRUITS	167,442	248,768	286,500
DATES	100,000	126,651	145,020
4. SPICES	5,553	7,934	9,777
5. TOTAL	212,804	322,383	378,016
INCREASE IN PRODUCTION			
	100%	151%	178%

NOTES : ITEM5=1+2+3+4-DATES

SOURCE : JICA TEAM ESTIMATE

expansion of, or reorganization of the existing organization and its functions, without affecting the present distribution structure, its personnel, and the farmers. The development should be as follows:

1) 1st Stage: To conduct a study on establishing a wholesale market in order to study and expand the distribution volume of PAMAP and to train staff of PAMAP for implementation of the pilot, i.e.:

- A study is to be conducted to establish a wholesale market,
- Expansion of distribution volume required in order for PAMAP to maintain wholesale market functions during the preparatory stage of establishing a market, and
- To increase the distribution volume, one way would be to facilitate shipment of the crops subsidized with input materials particularly to PAMAP.

2) 2nd Stage: To commence the functions of the wholesale market by PAMAP, and to carry out detailed design for the wholesale market.

- Based on the results of the activities in the 1st Stage, the pilot wholesale market suitable for Oman is to be inaugurated.

3) 3rd Stage: To construct and operate the central and local wholesale market by PAMAP and private sector

- In the beginning, the central wholesale market operation is to be conducted by PAMAP using Muscat and Salalah as the consumption sites for main distribution channels,

- PAMAP is to construct or improve the market facilities in both the central and local wholesale markets,
- Based on the operation method developed by PAMAP in the 2nd Stage, PAMAP provides guidance and supervision to the wholesale traders in order to strengthen physical distribution and price determination functions of the wholesale market, and
- In parallel with the above activities, local markets are operated by the private sector.
- The operating body for each wholesale market will be decided by the result of the study at the 1st stage.

(b) Measures for adjustment of the supply and demand relationship

The measures to be taken for the adjustment of supply and demand aim to provide stable production and planned delivery of agricultural produce. There are two possibilities: before cultivation and after cultivation and they are categorized and clarified below:

- (i) The government prepares the demand forecast based on the production and consumption trends, and announces it to the farmers for reference for their planting and shipping. Specifically:

1) Indirect adjustment for production and shipment, which is summarized as follows:

- to prepare a food supply and demand program for all food which is the base of the agricultural

production plan,

- to prepare a supply and demand forecast for principal foods within the above-mentioned program, and
- to announce the information to the farmers for reference for cropping varieties and areas to be planted, and for timing of planting and harvesting.

2) Direct adjustment for production and shipment, which would be done under a future project for planned production and delivery of principal agricultural produce, can be summarized as follows:

- to determine the specific agricultural produce which is to be supplied on a regular basis, and is determined by the supply and demand forecasts,
- to guarantee a stable profit for the farmers, and
- to require farmers to follow the adjustment schedule for production and shipment as directed by PAMAP

(ii) In cases of excess production or marked drops and rises in the prices of produce, a future project for stabilizing shipments of agricultural produce to the commercial farms and large-scale farmers would be as follows:

- incentive funds for the immediate shipping of produce, at the time of the marked rise in price, and
- price sustaining funds for adjusting shipments at the time of a market drop in the price of produce and,
- the preparation and publication of supply and demand

forecasts by PAMAP. Direct adjustment for production and shipment before and after cultivation is to be studied to identify suitable measures for Oman.

A study of basic data such as agricultural production, distribution, and consumption, is essential for the formulation of both of the above-mentioned projects. Moreover, data comparison is also essential. With respect to the collection of basic data conducted by MAF, PAMAP and ROP, an examination is recommended to guarantee efficient and effective collection and processing of the necessary data. PAMAP is in charge of the collection of data for distribution and consumption.

- (c) Promotion of distribution efficiency and establishment of shipping organizations for farmers

The promotion of distribution efficiency refers to the efficient delivery of agricultural products produced on the farm to consumers, through such activities as storage, transportation and distribution, paying particular attention to time, place, quality and cost of agricultural produce.

In order to reduce the distribution cost, or to distribute with minimum storage, demand adjustments should first be conducted in the production and shipping stage. In the next stage, after shipment, an efficient delivery program should be planned between each distribution center and each market. In addition, the time required for distribution from producer to consumer, should be minimized, taking into account the nature of the agricultural produce, i.e. its storability, etc. Whichever technique is employed, storage generally decreases freshness, and raises distribution costs of agricultural produce. Based on this, the following is required of PAMAP:

- to make an effort to plan an efficient delivery program and to deliver the agricultural produce according to plan, and

- to conduct appropriate management, training and implementation for using refrigerating stores, in order to efficiently distribute products with minimum storage.

The new stores and pre-cooling stores to be established to cater to the expansion of PAMAP's distribution, as well as to satisfy the needs of consumers with respect to quality and freshness, are to be planned and discussed in the facility development plan for main distribution channels.

(ii) Transportation and Establishment of Shipping Organizations for Farmers

Collection and shipment of agricultural produce can be classified into the following two stages:

1) 1st Stage: From farmer to PAMAP or wholesale traders

In this stage, a reduction in shipping costs and an increase in the amount being shipped by farmers, are targeted through strengthening the shipping organizations for farmers which assist the small-scale farmer shipments. The transportation industry is not well developed due to the relatively limited volume of goods distributed in the country. Accordingly, PAMAP or another public organization is required to collect the produce for the small farmers, or to assist them until farmer shipping groups are organized. The method for strengthening such shipping organizations for farmers is to be studied in relation to the above issues, and subsequently carried out.

2) 2nd Stage: From PAMAP or wholesale trader to retail stores or supermarkets through the wholesale market

In this stage, nation-wide transportation system development for the main distribution channels is targeted for. This transportation system must be studied so as to reduce

transportation costs, provide a more efficient delivery system between the respective shipping sites for produce, and to provide more balanced and constant shipping volumes controlled by the previously discussed demand adjustment measures.

The use of refrigerator cars for transportation is effective because of the high atmospheric temperature in Oman; however, maintaining the temperature of the produce is complicated by loading and unloading. The operations to maintain low temperature at which the produce is kept also results in higher transportation costs.

It may be best to introduce a cold-chain system, in which agricultural produce is pre-cooled immediately after harvesting, and then transported by refrigerator car. This system will make it possible to deliver high quality agricultural produce to consumers. In addition, the study on the transportation system is necessary from the view point of consumer requirements in terms of quality.

(iii) Distribution techniques

Distribution techniques, such as grading and packing should be studied. Since agricultural development aims for an increase in production and quality in the future, a greater variety and larger volume of produce will require a new system for main distribution channels.

Grading quality, as well as standardizing the size of the produce is an essential step towards rationalization and simplification of distribution activities. As too-strict grading and selection of the produce, however, result in confusion in production and distribution, an appropriate standard should be established for the selection process, taking into account farmer production techniques and consumer requirements for quality.

In grading and selecting produce, particular emphasis must be placed on the following:

- purchasing the produce from farmers at the price determined according to fairly-graded quality, and
- supplying the produce to the consumers at a price set according to that graded quality.

Of course, the importance of grading and standards should be duly published and made available to the producers and the farmers. Shipment to PAMAP should be encouraged by government policy in order to expand PAMAP's distribution volume. Non-standard produce may be included in such shipments. In order to enhance farmer production incentives, as well as to improve the size of farmer shipments, selective purchases should be made of both standard and non-standard produce. Such non-standard produce should be used as raw material for processed agricultural products.

At the same time, packing is also essential if the products are to maintain their quality and demand at a reasonable price. Packing is classified depending on whether packing occurs at the farm-gate, the distribution stage, the wholesale market, or the retail stage. Low-priced, domestic packing material should be used.

Efficient distribution will be achieved from the aspects of cost and quality through the introduction of well-balanced techniques in grading, packing, transportation and storage. The training to improve these distribution techniques is also of vital importance.

(d) Facilities development

The physical distribution route between production and

consumption will change according to the future increase in production, and changing demographics. More efficient distribution is to be achieved by using the optimum physical distribution route, determined by the relationships between farm-gate and collection centers in the region, and between respective collection centers and the consumer. Re-organization for more efficient arrangement of the collection and shipping centers for the future main distribution channels is to be studied, particularly in terms of appropriate scale and facilities, according to the conditions in each region and the role of the center there.

4.4.2 Agricultural Produce Processing

(1) Agricultural Production Forecast and Agricultural Product Processing

According to the supply and demand forecast for agricultural produce for the next 10 years, only a few types of produce which are dealt with by the various proposed projects will realize 100% self-sufficiency. This is clearly indicated in Table 2.2.11, Volume 5.

Mainly because of the prohibitive climatic condition in Oman, even if the timing of the planting and harvesting of the proposed cropping pattern shown in Tables 4.1 to 4.7 in Volume 5 is shifted to some extent, the annual gross production for shipment is concentrated in a 3 to 4 month period. Due to the seasonal characteristics of agricultural produce, a drop in price and in the amount sold has been observed recently for several crops and has resulted in dampening the farmers' production incentives.

With respect to the production plan for the year 2000, the monthly excess production of agricultural produce at present is analyzed in Table 4.4.6. This analysis illustrates that excess production occurs for bananas and garlic for several months. However, it is felt that a drastic drop in price will not occur because of their present exporting and storability.

Crops, other than the ones analyzed above, which are believed to be over-produced are dates and limes. The processing of agricultural produce such as the pickling of dates, limes and vegetables, is done in Oman as a countermeasure against excess production, low quality, damage, and low price.

By the year 2000, provided that a suitable supply and demand relationship is achieved for produce, productivity and profitability of the produce will be greatly improved. This produce should be used first for fresh food rather than for processed food.

At present, MAF is studying several plans: the complex processing factory for dates, limes and tomatoes, the factories for dates, handicrafts, pickled vegetables and fruits, and dry dates, and for the coconut processing factory. The following points ought to be taken into consideration while carrying out the study:

- (a) Stable and economical supply of agricultural produce for the necessary raw material,
- (b) Maintenance of high operation efficiency of the factory by the introduction of a complex agricultural produce processing industry,
- (c) Training of technicians and workers in the agro-processing industry, which requires the introduction of new technology and facilities, and
- (d) The government's financial, institutional and human support during the initial operation period.

(2) Potential of New Agricultural Produce Processing

- (a) There are a number of restaurants and hotels in the urban area. In these food service industries, the proportion of the cost of food material is estimated to be almost 40% of the entire sales. Therefore, procurement of appropriate food material is vital and

directly affects, not only the management, but also taste and service which are the primary considerations of the food service industry. In line with the further diversification of the kinds of meals available, a more stable supply of various kinds of food materials is required for the food service industry in the future. The present passive procurement, as supplied by wholesale traders or supermarkets will not meet future requirements. Accordingly, it is important to develop direct supply sources through specific sales routes.

In addition, a supply of raw material of the agricultural produce and preliminary processing of vegetables, etc. (such as shredding lettuce) may be required in order to save money in the food service industry. Accordingly, as part of formulating the integrated food material supply system, the development of a system for providing cut vegetables may be proposed as a subject for a feasibility study.

On the other hand, in spite of their taste and usefulness as raw food material, sub-standard crops are either not harvested at all or else cannot be sold even at low prices due to their being sub-standard. Such crops could be used for processing.

- (b) The development policy of the Fourth Five-year Development Plan will include the promotion of a national industrial economy through the increase of employment opportunities created by highly productive industrialization, using domestic raw materials.

However, the policies and measures for agricultural production and agricultural structure improvement are not adequate for the expansion of the farm management scale or for enhancing the agricultural management methods of the small-scale farmers.

Support for the farmers, and the increasing of their income will be achieved through providing employment opportunities in the region. Such employment opportunities can be created by

encouraging an industry which uses locally available resources, i.e. a rural industry which produces a specific agricultural product in the region, or goods produced by processing that product.

At the moment, however, it is recommended that a feasibility study be conducted, and that an experimental station be set up, or else measures should be taken to enrich regional resources through development of specific produce for each region.

4.5 Subsidy Institution

4.5.1 Development Target

(1) Price Policy

The major roles of the price policy are "price support" for optimization of price levels, and "price stabilization" to control fluctuations. More precisely speaking, price support serves to generate income and to improve income distribution, while price stabilization serves to adjust the supply-demand ratio. The problems and arguments which could result from the introduction of such a price policy are described below.

- 1 Problem of financial burden. There may be an argument for applying this financial source to other, more constructive policies.
- 2 Opinion against the highly-subsidized prices of domestic agricultural produce. Increased price disparity between domestic and imported produce.
- 3 Income disparities may be increased within rural society because the price policy is generally extended equally to every kind of producer.

In addition, the introduction of the price policy may adversely affect the production policy and structure policy. In connection with the production policy, more price support endangers the balanced supply-demand ratio and results in overproduction. Therefore, a price policy which maintains the ability to adjust the supply-demand ratio should place particular emphasis on its relationship with the production policy. The price formation and distribution policy should be extended intensively over specific, appropriate groups through converting the price support policies into subsidies, like social welfare.

In connection with the structure policy, an excessively highlighted price policy may hamper the improvement of the agricultural structure and, accordingly, production would remain low.

A price policy which only stresses the income policy (i.e. formation and distribution) needs to be studied comprehensively, with respect to other policies. However, which functions of the price policy are to be most important should be judged by the general economic situation, as well as by the supply-demand trends for agricultural produce and the agricultural production forecasts.

Appropriate income formation and distribution should be executed by policies other than the price policy at a time of price declination due to a failure in the supply-demand adjustment. These will be executed by the price policy only when prices decline due to good weather and a resultant good harvest, or when incomes decline due to a bad harvest.

The price policies are classified as follows, depending on the degree of intervention of the market mechanism:

1 Market control type:

Administrative price institution by which the government regulates the entire distribution volume in the market and determines the buying and selling prices.

2 Market price oriented type:

Under the premise of using the free market for price formation:

There are two kinds of programs: the price stabilization program in which the market price is stabilized within a specific price range by means of a buying-selling operation conducted by the government-related organization; and the minimum price guarantee program which guarantees a specific

minimum cost level.

These programs only aim at agricultural produce which is standardized, storable and easily purchased in the international market. It is difficult for this program to select the appropriate time for buying and selling, although that tends to encourage price fluctuations rather than stabilization.

3 Market price compensation type:

Under the premise of using the free market for price formation:

Application of subsidies so that the price differential between the standard price and the producer's selling price is supplemented; or the program for stabilizing funds so that a part of the price differential is supplemented by the funds accumulated by the producers, etc.

These measures focus on less-storable agricultural produce because buying is not conducted and therefore, storage is not required. The latter program aims at the realization of a supply-demand equilibrium price, i.e. the price which places marked emphasis on the market mechanism.

This program is not for price support which aims primarily to supplement income. This is the point at which it is different from the other price policies.

(2) Trade Policy

In general, the volumes of import and export, and the domestic production are determined partly by the domestic and international market mechanisms and are influenced by government intervention with agricultural produce trade policies, i.e. policy instruments such as trade barriers and customs duties which directly regulate the import and export of agricultural produce.

The interest caused by such agricultural protective policies sometimes causes serious antagonism within the nation, e.g. while the agricultural producers are benefiting from the policy, consumers are at a disadvantage because they must purchase agricultural produce at a domestic support price which is higher than the price of the imported produce. Even in this case, however, the consumer will benefit, from a long-term point of view, from several results such as national food security, preservation of national land and living circumstances, activation of the rural and regional economies, etc.

The measures employed under the trade policies are as follows:

1 Customs duties:

customs duties, import surcharges and variable import surcharges.

2 Trade barriers:

import volume controls, import quotas, import deposits and export bounties.

3 Indirect trade barriers:

epidemic controls, safety controls and hygiene controls.

At the same time, among other measures in the production policies, the domestic producer protective measure (the subsidization of agricultural input materials to reduce production costs) is not disadvantageous to the consumers or to equality in social welfare, though it is as advantageous to the producer as the above protective trade measures.

In spite of such advantages in the subsidy measures, the reason why the protective trade measures are generally employed is primarily that they are less of a financial burden compared to the subsidy

measures.

The comparison of the customs duties and subsidy-to-production cost indicates that the subsidies are more advantageous than the customs duties from the point of view of protecting local production, while the customs duties are better than the subsidies for simply reducing import volume.

The basic course of the trade policy is thus determined on the basis of the integrated agricultural policy, while imports and exports are regulated by the fiscal and financial policies outlined below.

(3) Financial and Subsidy Policy

The methods by which the financial and subsidy policies carry out measures for the achievement of the agricultural development policy are as follows:

- 1 Subsidies as a direct measure
- 2 Interest subsidies extended by institutional credit
- 3 Preferential treatment in taxation

Since the financial and subsidy methods depend on national revenue and are accordingly financially limited, they must be distributed efficiently and fairly. As is described in (b) above, for the producer, or farmer, the effect of a protective agricultural measure such as a subsidy is the same as that of a protective trade measure. The farmer does not put consumers at a disadvantage and he maintains social welfare standards, though it is more of a financial burden. On the other hand, protective trade measures are less of a financial burden, but they reduce the economic welfare of both consumers and society as a whole. Thus, both pure economic efficiency, and political and administrative efficiency should be taken into account in the selection of these measures.

As one policy method, a subsidy aims, on the basis of the government's administrative requirements, to do the following:

- 1 Provision of services for public capital investment,
- 2 Supplement of the market mechanism, and
- 3 Redistribution of income and mitigation of regional disparities.

In terms of the focuses of the subsidies, the agriculture-related subsidy can be categorized as follows:

- 1 Social overhead capital:

agricultural infrastructure development, agricultural structure improvement measures and distribution facility development.

- 2 Individual industry measures:

price stabilization measures, promotion of agriculture and livestock.

- 3 Education and cultural concerns:

agricultural improvement and extension services projects, and agricultural technology development.

- 4 Social welfare concerns:

livestock epidemic prevention.

- 5 Others:

agricultural credits, food distribution measures and

statistical information system improvement.

An institutional credit is one of the following governmental policy credits for the execution of agricultural policies:

- direct loan from the public finance department, and
- indirect, preferential measures by means of the financial instruments for lending sequential funds and commercial funds through:
 - debt compensation,
 - quantitative supplement of funds, and
 - qualitative supplement of funds, i.e. interest rate or loan period, etc.

In general, regular credit is not applicable to agriculture due to agriculture's low profitability, which results in characteristics of the agricultural production structure. Accordingly, the necessary money is extended, as a subsidy, from reserves of the national revenue, to the parts of the project which are verified as public goods, etc. The remaining money for the project or the money approved as necessary for the project in line with the policy objectives, is procured mostly from the subsidy measures using institutional credits such as long-term, low-interest loans. The last portion is borne by the beneficiaries.

The Institutional credit policy is characterized by the following:

- 1 Since it is a policy induced by means of indirect policy instruments, achievements of the policy, or its effect on the agricultural income generation is accomplished with a certain time lag and it is therefore weaker in effect than subsidy measures.
- 2 Since the policy objective can be accomplished by financial instruments, avoiding the national financial source, the

initial financial burden is lighter, while subsidiary objectives can be expanded.

The institutional credit, which is long-term and low-interest, requires a government subsidy to cover the inevitable backlog which arises due to:

- the loan interest rate being lower than the commercial interest rate, and
- the loan period being so long.

The practical application of the financial and subsidy policies should be carried out while taking the following into consideration for each project within the agricultural sector:

- public and private roles in the project,
- social aspects of the financial burden,
- investment cost efficiency of the project,
- composition ratios of subsidy and institutional credit, and
- achievement rate and speed with which the objective can be attained.

4.5.2 Development Strategy

(1) Price Policy

The price support policy is not in place at present in Oman. PAMAP determines the buying and selling prices by observing trends in market prices. The selling price is, generally, determined by adding the expenses for storage, transportation and distribution as well as profit to the buying price. However, since PAMAP's selling price does not include any profit, due to its role as a public

organization, there is a negative margin between PAMAP's buying and selling prices. This negative margin is subsidized by the government. The reasons why this is required are the increase of transportation cost corresponding to an expansion of the distribution system and the rise of storage cost, which makes it necessary to adjust shipments, and inefficient distribution functions.

Although PAMAP's distribution volume is only a portion of the entire volume of the country, its buying price still follows the trend of the market price, because of the above situation. The total amount of agricultural produce purchased by PAMAP in 1988 at a price lower than the production cost shown by DAS (MAF), accounts for 10% of the volume and 3% of the expenses of PAMAP's entire distribution process. The comparison of production cost and buying price indicates some produce with extremely high, or low prices (refer to Table 5.8.4, Volume 2). Annex Figures 5.8.2 to 5.8.17 show less fluctuations in monthly prices, in spite of large fluctuations in domestic volume of several crops in 1988 such as bananas, coconuts, cucumbers, garlic, onions, papayas, potatoes and tomatoes. The tables also show that modern management is financially feasible for most crops provided that various proposed agricultural production measures are taken. It is, therefore, regarded that the adoption of the price support policy is not an absolute necessity for income generation for, and income distribution to the farmers, except in the case of some crops. However, in order to increase production to meet the demand for each crop, the introduction of the price policy should be considered. It is necessary to conduct further analysis of the trends of monthly production volume and the price of each local crop. The price policy is also necessary for the promotion of wheat production.

(2) Trade Policy

The comparative analysis of Annex Figures 5.8.2 to 5.8.17 of Volume 2, which show the monthly price fluctuations for imported and local produce in 1988, reveals that the price of the imported produce is higher than that of local produce particularly for bananas,

coconuts, cucumbers, garlic, onions, papayas, potatoes and tomatoes. The result of the field interview survey conducted in November 1988 also indicated the same trend. The price of imported produce is about 1.5 times that of the local produce. Since a considerable volume of agricultural produce is imported from the UAE without customs duties, it is recommended that the analysis continue.

PAMAP has issued import licenses for agricultural produce since 1987. When a trader intends to import agricultural produce, he may do so only after obtaining a permit for the variety and quantity of the produce to be imported. PAMAP issues the license according to the inventory of the agricultural produce which corresponds to the produce applied for by the trader. This is not a strict protective trade measure at the border, so much as the regulation of imported volume, based on supply-demand balance determined by the analysis of trends of domestic production and consumption of the agricultural produce. PAMAP does not have data regarding the production, distribution and consumption covering the country which are required for effective execution of protective trade measures at the border.

Provided that the agricultural production increases and the distribution volume increases accordingly, the adjustment of the supply-demand ratio for agricultural produce, including imported products, is indispensable for the promotion of well-balanced agricultural development.

Therefore, practical measures for a trade policy should be studied for the purpose of increasing domestic agricultural production, as well as to generate income for farmers within the predicted socio-economic conditions in Oman. The present import license system and tariff policies should be maintained for the time being. For this purpose, it is essential to collect basic data connected with production, distribution and consumption.

(3) Financial and Subsidization Policy

Two types of financial policies are carried out in Oman. They

are: governmental subsidy, and financing by OBAF. The former type consists of two schemes: the subsidy for improving infrastructure, i.e. the construction of recharge dams, repair work on aflaj and improvement of irrigation systems; and one for agricultural input such as chemicals, fertilizers and machines. Judging from the contents of the financial policy, it is obvious that the government of Oman gives a high priority to the subsidy for agricultural inputs.

The subsidy for agricultural outputs will give farmers incentives and increase agricultural production; however, it will cause the income distribution in rural society to be unequal, as discussed in 4.2.5 (1) (a). In order to subsidize agricultural outputs smoothly and strictly, a market mechanism should be well-functioning in deciding the gate-prices of agricultural products, and a price checking system should be established. Furthermore, detailed data on production costs of all products and all farming patterns should be collected.

At present, this kind of system has not been established, nor has such information been acquired in Oman. Accordingly, establishment of a fair market system and the institutions for basic data collection concerning agricultural production, production costs, gate-prices, wholesale prices and consumer prices should be encouraged in order to equip the institutional organizations and economy for the introduction of output subsidies.

Consistent with the Third Five-year Development Plan, the 10-year Agricultural Development Plan puts high priority on the subsidies for improving infrastructure. The subsidy for agricultural inputs for small-scale farmers will continue to reduce production costs as well. This could also be used as an incentive for farmers in order to improve production of specific crops which the government intends to promote corresponding to the changes in demand for agricultural produce. At the same time, it is necessary to make a continuous effort to collect relevant, basic data, considering the imminent introduction of an appropriate output subsidization program.

As for the financing by the OBAF, programs which finance the following new projects should be introduced, in addition to the existing ones.

The following projects are suggested in the Master Plan;

1. Project for Introducing Modern Irrigation Systems

Increase harvest area by introducing drip irrigation, conservation methods, and more efficient use of irrigation water.

2. Project for Promoting Intensive Livestock Farming

Subsidize small-scale compound livestock farmers on their initial investments on animal sheds and grass seeds.

3. Project for Improving Management of Small-Scale Farmers

Subsidize small-scale farmers on the cost of cleaning up date palms, and constructing facilities for vegetable production like water tanks and irrigation facilities.

Irrigation facilities will be modernized and the management methods of small-scale farmers will be improved and stabilized by these projects.

CHAPTER 5

AGRICULTURAL DEVELOPMENT PLAN

CHAPTER 5 AGRICULTURAL DEVELOPMENT PLAN

5.1 Development Investment in Agriculture

(1) Current Government Investment in the Agricultural Sector

Investment by the government in agriculture in 1988 was 1.8% of the total government investment. Although roughly the same as that targeted at the manufacturing sector (1.7%), it is low in comparison to that invested in petroleum (21.0%) and natural gas (6.2%) as shown in Table 5.1.1.

In terms of infrastructure as well, less emphasis was given to the agricultural sector. Outlay for irrigation and water resources facilities was only 1.3 % of the total government investment, as compared with 6.0 % for municipal services, 5.7% for roads and 4.7 % for various educational infrastructures.

This low investment proportion in the agricultural sector can be attributed to a greater priority by the government, since 1970, for economic modernization through development of transportation, telecommunications, educational and other facilities related to daily life. This resulted in relatively lesser emphasis on investment in primary production sectors, particularly the less efficient agricultural sector.

However, a growing realization of the importance of the agricultural sector in the late 1970's prompted the government to form in 1979 an independent Ministry of Agriculture and Fisheries from the former Ministry of Fisheries, Petroleum and Minerals.

Nevertheless, priority of outlay for the agricultural sector has remained low. In the Third Five-year Development Plan beginning in 1986, the amount of government budget allocated to the sector was R.O. 76.4 million, or only 3.8% of the total. Given the fact that almost half of the labor force of Omani nationality is engaged in agriculture, and that more than half of the total population resides in rural areas, it will be

Table 5.1.1 Sectoral Distribution of Government Investment
(1978-1985)

(%)

Sectors	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Commodity Production Sectors											
Crude Oil	18.1	29.5	25.4	19.7	22.2	16.4	14.0	13.7	25.0	22.5	21.0
Natural Gas	2.4	1.0	1.6	1.9	0.2	1.0	1.5	2.2	2.7	2.3	6.2
Other Minerals	0.5	0.2	3.2	5.2	5.5	2.2	0.6	0.3	0.3	0.6	0.2
Agriculture	1.6	1.7	1.4	1.3	1.2	0.9	1.3	1.3	1.1	0.9	1.3
Fisheries	0.4	0.6	0.6	0.3	0.2	0.2	0.3	0.5	0.9	0.8	0.5
Industry	0.0	0.1	2.2	8.0	5.3	2.0	0.5	0.8	1.2	1.5	1.7
Subtotal	22.9	33.1	34.4	36.5	34.7	22.7	18.1	18.9	31.1	28.6	20.9
Service Production Sectors											
Housing	3.0	3.6	1.2	1.1	4.2	4.2	3.6	3.6	2.9	4.1	3.0
Commerce & Tourism	0.3	0.0	0.1	1.8	1.0	4.8	5.5	6.6	2.6	1.0	3.5
Electricity	0.8	5.7	6.4	5.0	7.3	6.5	5.2	2.5	5.6	6.4	6.2
Water	2.5	3.4	1.8	3.4	3.3	2.6	2.4	4.8	1.8	1.4	1.1
Post & Telecommunication	2.8	1.6	0.8	0.5	0.9	2.6	6.3	4.4	4.5	6.2	6.1
Financial Institutions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	15.4	14.3	10.3	11.9	17.6	21.4	23.0	22.0	17.4	20.0	19.9
Infrastructure											
Irrigation & Water Resources	0.4	0.6	0.6	1.3	1.3	1.2	1.8	2.3	1.2	0.5	1.3
Roads	9.7	22.9	15.0	17.1	9.1	8.1	7.2	11.5	9.3	7.7	5.7
Ports	4.4	3.8	3.0	0.3	1.3	0.0	0.2	0.0	0.1	0.0	0.0
Airports	1.4	2.3	1.7	0.6	0.3	0.3	0.5	1.2	0.7	0.3	0.1
Municipal Services	1.5	3.3	5.6	4.9	3.5	2.8	3.4	5.5	3.0	4.8	6.8
Education	3.5	1.9	1.8	2.4	7.4	5.5	6.4	6.8	7.2	5.0	4.7
Vocational Training	0.4	1.7	1.0	0.7	1.2	1.4	1.1	0.3	0.0	0.0	0.1
Health	2.0	1.5	1.3	1.5	1.2	2.2	3.4	3.7	6.6	8.2	3.6
Information, Culture, & Religion	2.1	1.0	1.9	0.8	2.0	2.5	3.4	2.0	1.4	2.2	2.3
Social Service Centers	0.3	0.6	0.6	0.5	0.4	0.6	0.5	0.3	0.2	0.2	0.2
Government Administration	36.8	12.8	22.7	20.8	19.9	38.5	31.8	25.5	21.7	22.5	25.1
Subtotal	61.7	52.5	55.3	51.6	47.7	55.9	58.9	59.1	51.4	51.4	48.1
Grand Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage of Main Sectors to Grand Total of Gov. Inv.											
Agriculture	2.3	2.9	2.6	3.0	2.8	2.3	3.4	4.1	3.2	2.1	3.2
Mining	21.0	30.7	30.2	26.8	27.9	19.6	18.0	16.2	27.9	25.5	27.4
Manufacturing	0.0	0.1	2.2	8.0	5.3	2.0	0.5	0.8	1.2	1.5	1.7
Total	23.3	33.7	35.0	37.8	36.0	23.9	18.8	21.1	32.3	29.1	32.3

necessary in the future to accord increased investment priority to this important sector.

The government, recognizing this necessity, designated both 1988 and the following year 1989 as "Agriculture Years", and sponsored a variety of activities to foster increased interest in agriculture at both the individual and government levels.

It is anticipated that under the 10-year Master Plan, an accelerated effort will be directed at the agricultural sector as a step toward the promotion of rural development, and improvement of farm income, thereby promoting equitable income distribution, easing off the pressures on urbanization by encouraging settlement in rural areas, etc.

(2) Investment Efficiency in the Agricultural Sector

In order to improve overall productivity of the agricultural sector, it is essential to upgrade the efficient application of three elements: land, capital, and labor.

The efficient use of land and capital can be addressed through well-planned, wise investment. Improvement of labor productivity can be achieved through continued programs of agricultural extension and training, and a stable supply of farm inputs and machinery. Here, land and capital can be regarded as the "hard" aspect of agricultural development, while the remaining labor aspect can be viewed as the "soft" aspect (in much the same way as the "hard" aspect for an automobile would be the machine itself, its components and fuel, while the "soft" aspect would be the capacity to drive the vehicle effectively).

An indicator of capital efficiency is the cost output ratio (COR) expressed as K/Y (K: capital, Y: output). However, the incremental cost output ratio (ICOR) is more conventionally applied due to the difficulty in evaluating K. The ICOR is expressed as $dK/dY = I/dY$ (I: investment). For a typical country, the ICOR for the national economy is generally 3 - 5, although quite a degree of variation may occur depending on the level of development as well as the conditions existing at the initial stage of

development. Some example figures from the 1970's are 5.8 for India and 6.8 for Sri Lanka in South Asia, and 3.0 for Korea in East Asia. Japan exhibited a high value of 5.4 for the 10-year period from 1965-1975. It is generally assumed that the ICOR is relatively high at the initial stage of a country's development, steadily dropping as industrialization progresses. The reason for this is that emphasis in the early stages of development is directed at infrastructure at the expense of production sectors. Accordingly, investment has little direct effect on improving production. Again in the case of Japan, COR (exhibiting the same long-term trend as ICOR) for investment efficiency in social infrastructure was 6 - 8 during the 1920's and 30's. For the likewise poorly productive agricultural sector, COR at the initial stage of modern economic development in Japan was more than 5.

The JICA team estimates the ICOR 3-year moving average in Oman for the period 1979-1985 to be 5.0-2.6 for the economy as a whole, and specifically 15.8-1.5 for the mining sector, 2.7-0.9 for the manufacturing sector, and 7.8-2.5 for the agricultural sector. Although unavailability of complete data places a limit on the reliability of calculations, ICORs for all sectors appear to exhibit high values at the start of the 1980's, with subsequent drops thereafter. This indicates an increase in investment efficiency with the passage of time.

However, in the case of the agricultural sector, it is possible that ICOR in the estimation period is the result of less investment in the sector and the biased investment in relatively profitable areas of the sector. Consequently, the comparatively low ICOR for the agricultural sector is regarded as a reference only.

Also, investment in the physical infrastructure of the agricultural sector commenced only recently, and as future investment in the sector increases and is directed at less efficient sub-sectors as well, the depressed ICOR value can be expected to rise.

(3) Investment Efficiency in the 5-Year Agricultural Development Plan

In formulating the 5-year Agricultural Development Plan, it will be

necessary to propose the scale of development investment to be allocated by the government. To achieve this, the ICOR for the agricultural sector is assumed and the GDP increment is forecasted. On this basis, the necessary total investment is determined.

In the case of a conventional development model based on a short time period such as 5 years, the ICOR is assumed to be sufficiently constant so that a single value can be applied. Although an ICOR value of 5 would conventionally be applied for the 5-year period, the following conditions must be considered in the case of the subject sector:

- (a) With the exception of only very limited areas, agriculture in Oman is at a very underdeveloped level.
- (b) Development of physical infrastructures like recharge dams which contribute indirectly to agricultural production, as well as modern irrigation facilities directly affecting production, is lacking. The former needs a great amount of investment in spite of its delayed impact to production increase, namely GDP increase.
- (d) Overall, agricultural development will depend greatly on improved farming skills and active participation on the part of farmers themselves. Such upgrading of skills and changing of attitudes cannot be achieved overnight, and consequently short-term improvement of farm-labor productivity cannot be expected. Intensive efforts still have to be directed at the training of extension workers and increasing the range of extension activities, as well as establishing a stable supply of farm input necessary for improved agriculture.

On the basis of the above, a value of 8 which represents the ICOR commonly seen in the case of physical infrastructures in the initial stage of development is to be adopted as the ICOR for the agricultural sector during the 5-year period.

GDP in the agricultural sector for 1988-2000 is estimated in Table 5.1.2. GDP figures are calculated on the basis of yearly cultivated areas

Table 5.1.2 GDP Growth of Agriculture Sector

(1,000 R.O.)

Crop	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Date Palm	8,162.6	8,537.2	8,928.9	9,338.7	9,767.2	10,215.4	10,684.2	11,174.5	11,687.3	12,223.6	12,784.5	13,371.2	13,984.8
Grape	432.1	531.5	653.8	804.2	989.2	1,216.8	1,496.7	1,841.1	1,986.2	1,973.7	2,043.5	2,115.7	2,190.6
Banana	3,201.2	3,338.1	3,480.8	3,629.6	3,784.8	3,946.8	4,115.3	4,291.3	4,458.9	4,633.1	4,814.1	5,002.1	5,197.5
Coconut	771.8	876.5	995.4	1,130.4	1,283.7	1,457.8	1,655.5	1,880.0	1,945.8	2,013.9	2,084.3	2,157.2	2,232.7
Papaya	534.2	516.8	500.0	483.7	467.9	452.7	437.9	423.7	444.4	466.2	489.0	512.9	538.0
Alfalfa	6,247.6	6,509.1	6,781.5	7,065.4	7,361.1	7,669.1	7,990.1	8,324.5	8,785.1	9,271.1	9,784.1	10,325.4	10,896.6
Rhodes Grass	11,283.8	11,735.5	12,205.3	12,693.9	13,202.1	13,730.6	14,280.3	14,852.0	15,446.3	16,043.1	17,364.7	18,293.4	19,271.8
Wheat	102.1	107.3	112.7	118.4	124.4	130.7	137.4	144.3	151.1	162.4	172.3	182.7	193.8
Sorghum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cowpea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tomato	3,600.2	3,769.9	3,864.3	3,970.6	4,079.8	4,192.0	4,307.2	4,425.7	4,521.3	4,619.0	4,718.7	4,820.7	4,924.8
Sweet Melon	6,711.8	7,091.6	7,492.9	7,916.9	8,365.0	8,838.3	9,338.5	9,866.9	10,442.8	11,052.2	11,697.2	12,379.9	13,102.3
Potato	302.3	367.0	445.6	541.0	656.8	797.4	968.1	1,175.4	1,208.3	1,242.1	1,276.9	1,312.7	1,349.4
Carrot	1,143.3	1,167.6	1,192.4	1,217.7	1,243.5	1,269.9	1,286.9	1,324.4	1,377.8	1,433.4	1,491.1	1,551.2	1,613.8
Garlic	585.1	606.2	628.2	650.9	674.5	698.9	724.2	750.4	772.8	795.9	819.7	844.2	869.4
Cabbage	1,024.4	1,066.5	1,110.3	1,155.9	1,203.4	1,252.9	1,304.3	1,357.9	1,414.6	1,473.7	1,535.2	1,599.3	1,666.1
Okra	165.4	166.1	166.7	167.3	168.0	168.6	169.3	169.9	170.5	187.4	196.8	206.7	217.1
Onion	279.0	288.9	299.1	309.7	320.7	332.1	343.9	356.1	370.9	403.2	429.1	456.6	485.9
Cucumber	1,955.5	2,004.7	2,055.1	2,106.8	2,159.8	2,214.1	2,269.8	2,326.9	2,417.0	2,510.5	2,607.6	2,708.6	2,813.4
Eggplant	431.6	446.3	461.5	477.2	493.5	510.4	527.8	545.0	569.5	594.3	620.2	647.2	675.4
Radish	1,114.2	1,171.4	1,231.6	1,294.9	1,361.4	1,431.3	1,504.9	1,582.2	1,667.2	1,756.3	1,851.1	1,950.5	2,055.3
Squash	402.5	418.0	434.1	450.8	468.2	486.2	505.0	524.4	548.0	572.7	598.5	625.5	653.6
Cauliflower	140.0	139.8	139.7	139.5	139.4	139.2	139.1	138.9	144.7	150.8	157.1	163.6	170.5
Lime, Lemon	4,061.6	3,982.4	3,904.8	3,828.7	3,754.1	3,680.0	3,608.2	3,538.9	3,629.2	3,721.7	3,816.7	3,914.0	4,013.9
Mango	1,713.7	1,773.0	1,834.4	1,897.9	1,963.6	2,031.6	2,101.0	2,174.6	2,245.0	2,317.7	2,392.8	2,470.2	2,550.2
Chilli Pepper	1,691.8	1,770.3	1,852.4	1,938.3	2,028.2	2,122.3	2,220.7	2,323.8	2,444.8	2,572.1	2,706.0	2,846.9	2,995.2
Tabacco	4,986.5	5,096.6	5,209.1	5,324.1	5,441.7	5,561.8	5,684.0	5,810.1	5,938.4	6,068.5	6,203.5	6,340.4	6,480.4
Milk	4,609.3	4,653.5	4,698.1	4,743.1	4,788.5	4,834.4	4,880.7	4,927.5	5,064.5	5,205.2	5,349.9	5,498.7	5,651.5
Mutton	5,132.4	5,643.5	6,205.3	6,823.2	7,502.5	8,249.5	9,070.9	9,974.0	11,375.6	12,974.1	14,797.3	16,876.7	19,248.3
Beef	3,170.8	3,448.8	3,751.3	4,080.4	4,438.2	4,827.5	5,250.9	5,711.4	6,251.1	6,879.0	7,591.2	8,371.7	9,212.4
Chicken	548.3	823.7	1,237.5	1,859.1	2,793.0	4,196.1	6,304.1	9,471.0	10,411.9	11,446.3	12,583.5	13,833.6	15,208.0
Egg	575.3	734.6	938.1	1,198.0	1,529.9	1,953.7	2,494.9	3,186.0	3,446.6	3,728.4	4,033.3	4,363.2	4,720.0
Other Vegetables	117.4	123.5	130.0	136.0	143.9	151.4	159.4	167.7	176.5	185.7	195.4	205.6	216.4
Other Tubers	237.6	263.8	292.9	325.2	361.0	400.9	445.1	494.2	547.0	605.4	670.1	741.6	820.9
Other Citrus	2,101.0	2,156.9	2,214.3	2,273.2	2,333.7	2,395.7	2,459.5	2,524.9	2,595.3	2,667.7	2,742.1	2,818.5	2,897.1
Other Fruits	223.7	276.4	341.5	422.0	521.4	644.2	796.0	983.5	1,140.6	1,322.8	1,534.1	1,779.2	2,063.4
Total	77,820.1	81,594.0	85,789.7	90,513.5	95,814.1	102,301.2	109,674.1	118,763.8	125,434.7	132,626.6	140,391.5	148,787.7	157,880.4
Growth Rate		4.8	5.1	5.5	6.0	6.6	7.3	8.3	8.6	9.1	9.6	10.1	10.6

for each crop, and present and planned production costs and income per cropped areas. Estimated figures show GDP growth of 6.2%/year during 1988-1995.

The investment amount obtained by multiplying the GDP increment by the ICOR is the total for both public and private investment. On the basis of past trends, it is assumed that public investment will account for 70% of the total for the duration of the 5-year period.

Necessary public investment during the two five-year periods based on ICOR and GDP increments for 1990-1995 and 1995-2000 are calculated in Table 5.1.3. For comparative purposes, investment amounts applying an ICOR of 4, 6 and 10 were also computed.

It can be seen that R.O. 185 million is the appropriate value for necessary government investment to achieve implementation of the 5-year Agricultural Development Plan where ICOR is 8. (A note of caution regarding the above: as calculations are, out of necessity, based on certain hypothetical conditions, the fluctuation of any of these will subsequently raise or lower to some degree the suspect figures.)

In addition to cost effectiveness, the following criteria must also be considered in establishing the amount of agricultural investment:

- (a) Agricultural investment is by nature investment in the rural society, and serves to rectify disparities in income distribution and social infrastructure development between urban and rural areas.
- (b) The linkage effect or intangible benefit, beyond the agricultural sector, can be anticipated to be that almost half of the labor force of the Omani nationality will be engaged in agriculture.
- (c) Investment in large-scale agricultural production infrastructures such as recharge dams, etc. due to their multipurpose nature can be anticipated to have a strong impact on stimulating economic activity outside the agricultural sector as well.

Table 5.1.3 Required Government Investment in Agriculture Sector
Calculated through ICOR

Item	1988	1990	1990- 1995	1995- 2000	Total Investment
GDP (R.O. 1,000)	77,820.1	85,789.7	118,763.8	157,888.4	
GDP Increase			32,974.2	39,116.6	
Case 1 Assumed ICOR			4.0	3.2	
Necessary Investment			131,896.6	125,173.2	
Gov. Contribution to Total Investment (%)			70.0	65.0	
Gov. Investment			92,327.6	81,362.6	173,690.2
Private Investment			39,569.0	43,810.6	83,379.6
Case 2 Assumed ICOR			6.0	4.8	
Necessary Investment			197,844.9	187,759.9	
Gov. Contribution to Total Investment			70.0	65.0	
Gov. Investment			138,491.4	122,043.8	260,535.3
Private Investment			59,353.5	65,716.9	125,069.4
Case 3 Assumed ICOR			8.0	6.4	
Necessary Investment			263,793.2	250,340.3	
Gov. Contribution to Total Investment			70.0	65.0	
Gov. Investment			184,655.3	162,725.1	347,380.4
Private Investment			79,138.0	87,621.2	166,759.2
Case 4 Assumed ICOR			10.0	8.0	
Necessary Investment			329,741.5	312,932.9	
Gov. Contribution to Total Investment			70.0	65.0	
Gov. Investment			230,819.1	203,406.4	434,225.5
Private Investment			98,922.5	109,526.5	208,449.0

In addition to determining the ICOR as per above, it will also be necessary to establish the criterion for calculating the appropriate share that the agricultural sector should receive from total national investment. From the viewpoint of optimum allocation of resources, it is recommended that at least 10% of total government investment be directed at the agricultural sector (in 1988, the outlay for agriculture by the government, including production and infrastructure, was only 3.0 % of the total investment). Although investment in the agricultural sector is less cost effective due to its relatively low productivity, from the long-term viewpoint it is warranted in order to diversify the pillars supporting the Omani economy which is currently overly dependent on its petroleum industry, as well as to improve the welfare of the farmers who make up almost half of the labor force of Omani nationality.

In this regard, the JICA team herein recommends that the minimum investment be R.O. 185 million for the coming 5-year Agricultural Development Plan.

At a national policy making level, a strong awareness of the importance of agriculture has emerged, and increased investment in the sector can be expected.

5.2 Budget for 5-Year Agricultural Development Plan

5.2.1 Definition of Components included in Budget

The 5-year Agricultural Development Plan described in the following chapters is a detailed explanation of the projects tabulated in the first 5-year period of the 10-year Master Plan, alternative 2, which is recommended by the JICA team in volume 3, section 5.4.

This budget total includes investment directly affecting the agricultural GDP referred to hereinafter as "agricultural investment", as well as indirect investment in such related sectors as service (PAMAP projects) and industry (agricultural produce processing projects). However, additional recurrent budgets to be incurred in relation to the projects have been tabulated separately. Also, cases where government investment is joined by private sector investment or financing by OBAF are grouped by funding source.

A sectoral description of project components is contained in section 5.3.

5.2.2 Required Budget for Agricultural Development

5.2.2.1 Overall Budget

The required budget for agricultural development over the first 5 years under the 10-year Master Plan is R.O. 278 million (Table 5.2.1). Of this, outlay from the budget of MAF is R.O. 261 million, and that from PAMAP is R.O. 17 million. Agricultural investment is R.O. 240 million.

Yearly budget requirements for the first 5-year period are set out in Table 5.2.2.

5.2.2.2 Sectoral Budget

(1) Sectoral Allocation and Yearly Allocation

Tables 5.2.3 - 5.2.10 indicate sectoral and yearly allocation for the 5-year period.

(a) Irrigation and Dam Sector

The foregoing is characterized by a relatively heavy outlay for the irrigation and dam sector, to include construction of modern irrigation facilities and recharge dams, due to the general backward state of agricultural production infrastructure. This outlay is 49% of the total.

From the standpoint of conservation of precious water resources, the general public impact of irrigation facilities and recharge dam construction ranks in proportion to other public welfare infrastructures such as schools, hospitals, roads, etc. As water-use affects the country as a whole and not just the agricultural sector, they have been accorded high priority.

Target area for Subsidy for New Irrigation System Project aimed at effective use of limited water resources is 30,000 ha under the 10-year Master Plan, of which 13,000 ha will be implemented over the first 5 years. Target area under the pilot project for centrally-controlled irrigation for the first 5-year period is 47 % of that under the 10-year Master Plan. 25 of 39 promising recharge dam projects tabulated for the 10-year period will be implemented in the first 5 years. Project load for repair and maintenance of the traditional irrigation systems, aflaj and wells, is half that under the Master Plan.

(b) Agriculture Sector

The Master Plan places emphasis on the vertical development of agricultural productivity. In order to achieve this, special weight

in terms of budget outlay is given to strengthening and expanding extension and research activities at the core of transfer of new technology to farmers.

The Rumais Agricultural Research Center was established in 1971. Unfortunately, lack of adequate facilities has prevented full realization of its research potential. This in turn has constrained extension activities. There are a number of urgent research issues which require attention and which are directly related to increases in agricultural production. These include identification of crop-water requirements, development of appropriate fertilizing and pest-control methods, dispersion of the cropping season, selection of new varieties, etc. Demand at the farmer level for a resolution of these issues remains high. Thus facilities, equipment and staff at the Rumais Agricultural Research Center will be strengthened to effectively carry out the above research.

More effective research will in turn result in more effective extension activities. Furthermore, the present system is involved directly in some extension activities such as soil survey. Accordingly, R.O. 10 million is targeted for research facilities and equipment.

Extension and general farm-related activities are one of the highest priority sectors under the agricultural development plan. Establishment of a basic framework for the conduct of intensive extension activities is thus a major target.

Establishment of extension facilities is concentrated in the first 5-year period to provide the essential framework for future activities.

A national aerial pest-control project is to be carried out with 100 % subsidy from the government during the first 5-year period. During the second 5-year period, however, farmers would be expected to bear the cost for the pest-control agro-chemicals themselves.

Agricultural technology information units at each of the extension centers in 30 key towns will be implemented over the 5 years.

The Development Support Communication Center will be constructed in an early stage of the 5-year Agricultural Development Plan as well.

Total budget for extension, research and general farm related activities for the first 5-year period is 13 % of the total.

(c) Livestock Sector

Livestock has much potential for development. Small farm in Oman are generally engaged in a combination of both crop cultivation and animal husbandry. In order to promote permanent settlement in rural areas and stem influx into urban centers, it is important to upgrade the productivity of this traditional form of farm management.

Towards this objective, a subsidy for poultry farmers is to be implemented during the first 5-year period. However, to encourage independence of farmer effort no subsidies would be provided farmers during the second 5-year period.

The Intensive Livestock Production under the Small Farm Development Support Project would target 5 % of all holders for subsidy.

Given the urgency of measures to combat serious livestock infectious diseases such as FMD, rinderpest, PPR and CCPP, the Animal Health and Disease Control Project is to be implemented during the first 5 years.

The Livestock Input Company Project, to supply concentrated feed and breeder birds important for increasing productivity of animal husbandry, would be implemented as early as possible to encourage participation from the private sector.

Livestock-related research is to be implemented throughout the 5-year period. Livestock related budget is 17 % of the total (Table 5.2.7).

(d) Distribution Sector

In the distribution sector, wholesale markets and collecting and shipping stations are to be implemented in a phased manner over the 5-year period (Table 5.2.8). Projects related to distribution of crop and livestock products total R.O. 15 million.

(e) Agricultural Produce Processing Sector

The agricultural produce processing projects aim at nurturing private sector participation through government subsidies. Construction of a coconut plant in the Southern Region and other projects under the program will be commenced as the results of the feasibility studies in this regard become available. Total cost for the projects is R.O. 22 million, of which outlay by MAF would be R.O. 10 million (Table 5.2.27).

(f) Inter-sectoral Projects

Inter-sectoral projects include the Integrated Agricultural Development Project in Nejd, the Project for Improvement and Maintenance of MAF Facilities and on-going projects. The Nejd project is considered particularly promising, and will entail an integrated implementation of research, extension and irrigation facilities with a view to increased agricultural investment efficiency. Budget for these inter-sectoral projects is R.O. 32 million (Table 5.2.10).

(2) Regional Budget Allocation

Design for regional allocation on a sectoral and project basis is

indicated in Tables 5.2.11 - 5.2.19. Regional allocation was determined on the basis of the following criteria:

- (a) Projects with a fixed project area have been included in the allocation for the region to which that area belongs.
- (b) For projects for which total project load is known but specific regional outlay will not be clear until the implementation stage, proportional outlay per region has been estimated in advance on the basis of the most probable criteria, such as proportion of cropped area to occur in a particular region, etc.
- (c) In the case of strictly national projects and programs, regional outlay was estimated on the basis of arbitrary criteria such as number of head of livestock affected in a particular region, etc.

Details of regional budget outlay are contained in section 5.3.

(3) Source Allocation of Funding

The Master Plan includes projects funding jointly by the government, and either OBAF or the private sector. Tables 5.2.20 - 5.2.28 indicate these projects according to source of funding. Total necessary funding from all sources under the Master Plan is R.O. 315 million (Table 5.2.20). Capital participation from the private sector is anticipated particularly under the agricultural produce processing projects (Table 5.2.27) and the livestock marketing improvement projects (Table 5.2.25). Expected private sector investment in the projects included under the Master Plan for the first 5-year period totals R.O. 21 million.

Funding participation by OBAF under the Master Plan is anticipated at R.O. 17 million. This funding will principally be lent to supplement the government subsidy program. For sectors, the bulk of financing from the bank is expected in relation to projects to establish modern irrigation facilities.

(4) Time Schedule of Projects

The time schedule of the projects is shown in Tables 5.2.29 - 5.2.37.

Table 5.2.1 Budget Total - 5-Year Plan

SECTOR	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)
Irrigation and Dam	NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System	19,800
	NW-2	Subsidy for New Irrigation System Project	16,250
	NW-3	Legal Framework for Agricultural Water Use	170
	NW-4	Recharge Dams	48,025
	NW-5	Sub-surface (Underground) Dams	2,500
	NW-6	Aflaj	29,670
	NW-7	Wells	9,000
	NW-8	Springs	1,969
	NW-9	Erosion Control and Protection of Agricultural Land against Floods	3,870
	NW-10	Survey and Monitoring	4,264
Agricultural Research			9,625
	NAR-1	Support for Agricultural Research Stations	2,710
	NAR-2	Establishment of New Research Units and Laboratories	3,075
	NAR-3	Development and Establishment of Experimental Farms and Nurseries	1,040
	NAR-4	Forestry-Improvement Program	1,000
	NAR-5	Establishment of Locust Survey and Central Unit	1,000
Agricultural Extension	NAR-6	Soil Surveys	800
			14,123
	NAE-1	Improvement and Development of Extension Centers and Facilities	3,520
	NAE-2	Establishment of Development Support Communication Center(DSCC)	1,190
Agricultural Production	NAE-3	Training of Researchers, Extension Staff and Statistics Staff	1,503
	NAE-4	Intensive Extension Guidance Program	7,910
			12,960
	NAA-1	Collection and Organization of Agricultural Statistics	1,360
Livestock	NAA-2	Agricultural Exhibitions and Festivals	700
	NAA-3	National Project for Plant Protection and Aerial Spraying	5,000
	NAA-4	Agricultural Technology Transfer to Farmers Project	5,000
	NAQ-1	Development and Improvement of Plant Quarantine	900
			47,546
Distribution	NLL-1	Rangeland Revegetation Project in Southern Region	2,352
	NLL-2	Animal Health and Disease Control Project	16,425
	NLE-1	Livestock Extension Development Project	482
	NLR-1	Livestock Research Development Project	4,050
	NLM-1	Livestock Marketing Improvement Project	6,371
	NLL-3	Livestock Input Company Project	1,359
	NLL-4	Small Farm Development Support Project	15,285
	NLL-5	Livestock Specialized Services Program	1,222
Agricultural Produce Processing			15,397
	ND-1	Establishment of Wholesale Market	3,656
	ND-2	Supply and Demand Forecast of Agricultural Produce	444
	ND-3	Establishment of Shipping Organization for Farmers	1,220
Inter-Sectoral	ND-4	Fortification of PAMAP	10,077
			10,474
	NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	5,100
	NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	1,134
Total	NP-3	Establishment of Pickling and Vinegar-Processing Plant	1,614
	NP-4	Establishment of Coconut-Processing Plant	2,626
Inter-Sectoral			32,333
	NI-1	Integrated Agricultural Development Project in Nejd	13,242
	NI-2	Improvement and Maintenance of MAF Facilities	16,991
	NI-3	Artificial Rainfall Project	0
	OI-1	Citizen's Compensation against Natural Crisis	1,500
	OI-2	Master Plan for Development of Date Palm Cultivation	600
Total			277,976

Table 5.2.2 Annual Budget Total - 5-Year Plan

SECTOR	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RD)	ANNUAL BUDGET REQUIREMENT				
				1991	1992	1993	1994	1995
Irrigation and Dam	NI-1	Improvement of Irrigation System and Centrally Controlled Water-Distribution System	19,800	20,132	23,117	27,835	29,538	34,896
	NI-2	Subsily for New Irrigation System Project	10,250	2,500	2,500	3,750	3,750	3,750
	NI-3	Legal Framework for Agricultural Water Use	170	45	45	45	45	30
	NI-4	Recharge Dams	48,025	8,350	9,450	9,600	9,600	11,475
	NI-5	Sub-surface (Underground) Dams	2,500	75	100	180	180	1,965
	NI-6	Flies	29,678	5,150	6,210	6,110	6,970	6,878
	NI-7	Wells	9,800	1,800	1,800	1,800	1,800	1,800
	NI-8	Springs	1,969	378	375	378	416	430
	NI-9	Erosion Control and Protection of Agricultural Land against Floods	3,878	78	780	1,048	1,030	978
	NI-10	Survey and Monitoring	4,264	1,137	1,137	1,282	322	315
Agricultural Research	NAR-1	Support for Agricultural Research Stations	9,625	2,420	2,200	1,700	1,700	1,595
	NAR-2	Establishment of New Research Units and Laboratories	2,710	1,065	640	395	325	315
	NAR-3	Development and Establishment of Experimental Farms and Nurseries	3,075	875	690	418	588	528
	NAR-4	Forestry-Improvement Program	1,000	200	200	200	200	200
	NAR-5	Establishment of Locust Survey and Central Unit	1,000	200	200	200	200	200
	NAR-6	Soil Surveys	800	200	200	200	200	200
Agricultural Extension	NAE-1	Improvement and Development of Extension Centers and Facilities	14,123	3,737	2,838	2,742	2,432	2,376
	NAE-2	Establishment of Development Support Communication Center (DSCC)	3,520	764	744	744	894	584
	NAE-3	Training of Researchers, Extension Staff and Statistics Staff	1,150	782	258	212	12	6
	NAE-4	Intensive Extension Guidance Program	1,583	688	284	284	204	204
Agricultural Production	NAP-1	Collection and Organization of Agricultural Statistics	7,910	1,582	1,582	1,582	1,582	1,582
	NAP-2	Agricultural Exhibitions and Festivals	12,960	2,859	3,038	2,883	2,883	2,850
	NAP-3	National Project for Plant Protection and Aerial Spraying	700	275	50	63	262	50
	NAP-4	Agricultural Technology Transfer to Farmers Project	5,000	1,000	1,000	1,000	1,000	1,000
	NAP-5	Development and Improvement of Plant Quarantine	800	200	400	180	200	200
	NAP-6	Rangeland Revegetation Project in Southern Region	47,546	9,064	9,545	9,471	9,961	9,505
	NAP-7	Animal Health and Disease Control Project	2,352	576	576	400	400	400
	NAP-8	Livestock Extension Development Project	18,225	3,037	2,971	3,237	3,550	3,335
	NAP-9	Livestock Research Development Project	482	196	30	30	196	30
	NAP-10	Livestock Marketing Improvement Project	4,858	837	792	792	792	837
Distribution	NAD-1	Livestock Inout Company Project	6,371	575	1,661	872	1,734	1,529
	NAD-2	Small Farm Development Support Project	1,359	376	393	393	393	393
	NAD-3	Small Farm Development Support Program	15,285	3,065	3,028	3,046	3,078	3,068
	NAD-4	Livestock Specialized Services Program	1,222	778	111	111	111	111
	NAD-5	Establishment of Wholesale Market	15,397	573	682	3,584	4,192	6,426
Agricultural Processing	NAP-1	Supply and Demand Forecast of Agricultural Produce	3,650	243	40	111	459	2,803
	NAP-2	Establishment of Shipping Organization for Farmers	444	150	114	60	120	120
	NAP-3	Establishment of Shipping Organization for Farmers	1,220	160	160	320	320	420
	NAP-4	Fortification of PHAP	18,877	180	288	3,203	3,203	3,203
Inter-Sectoral	NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	19,474	1,772	4,564	3,318	622	300
	NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	5,100	100	2,500	2,500	150	300
	NP-3	Establishment of Pickling and Vinegar-Processing Plant	1,134	149	430	496	150	150
	NP-4	Establishment of Coconut-Processing Plant	1,814	132	1,482	412	472	200
Total	NI-1	Integrated Agricultural Development Project in Naid	32,333	8,450	7,851	5,595	4,411	6,866
	NI-2	Improvement and Maintenance of RFP Facilities	13,242	1,555	1,555	1,555	3,311	4,955
	NI-3	Artificial Rainfall Project	16,931	5,895	5,895	3,688	882	800
	NI-4	Citizen's Compensation against Natural Crisis	9	300	300	300	300	300
Total			277,976	49,814	53,796	56,703	55,349	63,114

Table 5.2.3 Annual Budget of Irrigation and Dam Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	5 YEAR TOTAL (1000000)	ANNUAL BUDGET REQUIREMENT				
			1991	1992	1993	1994	1995
NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System	19,800	620	980	3,800	6,360	8,040
	Study Phase(P/S,F/S)	1,580	320	480	300	240	240
	Pilot Project	18,220	300	500	3,500	6,120	7,800
NW-2	Subsidy for New Irrigation System Project for 30,000ha	16,250	2,500	2,500	3,750	3,750	3,750
NW-3	Legal Framework for Agricultural Water Use	170		45	45		80
NW-4	Recharge Dams	48,825	8,350	9,150	9,450	9,600	11,475
NW-4-1	Groundwater-Recharge Scheme						
	Study Phase	3,750	750	750	750	750	750
	Construction Phase	38,280	6,600	7,400	7,500	7,500	9,200
NW-4-2	Maintenance and Improvement of Existing and Newly Constructed Dams	2,325	250	250	450	600	775
NW-4-3	Recharged Water Effective Use Pilot Project(Study)	250	50	50	50	50	50
NW-4-4	Identification of New Groundwater-Recharge Schemes	3,500	700	700	700	700	700
NW-5	Sub-Surface (Underground) Dams	2,500	75	100	180	180	1,965
	Reconnaissance Study	75	75				
	Preliminary Study	150		100	50		
	Feasibility Study	300			100	150	50
	Pilot Project(Construction)	1,900					1,900
	Observation and Monitoring	75			30	30	15
NW-6	Aflaj	29,670	5,150	6,270	6,110	6,070	6,070
NW-6-1	Repair and Maintenance of Aflaj	24,000	4,800	4,800	4,800	4,800	4,800
NW-6-2	Distribution System Improvement Pilot Project in Oasis(Study)	750	150	150	150	150	150
NW-6-3	Improvement and Maintenance of Major Aflaj						
	Study	920	200	320	160	120	120
	Construction	4,080		1,800	1,800	1,800	1,800
NW-7	Wells	9,000	1,800	1,800	1,800	1,800	1,800
NW-7-1	Subsidy for Repair of Existing Open Wells	3,000	600	600	600	600	600
NW-7-2	Assistent Wells for Aflaj	6,000	1,200	1,200	1,200	1,200	1,200
NW-8	Springs	1,989	370	375	370	416	430
NW-8-1	Improvement of Springs	1,750	350	350	350	350	350
NW-8-2	Annual Maintenance of Open Channel for Spring	219	20	25	28	66	80
NW-9	Erosion Control and Protection of Agricultural Land against Floods	3,870	70	760	1,040	1,030	970
	Study Phase	270	70	50	50	50	50
	Construction Phase	3,600		710	990	980	920
NW-10	Survey and Monitoring	4,264	1,197	1,137	1,282	332	316
NW-10-1	Long-term Plan for Areal Photography and Ortho-photo Mapping	1,118	250	217	217	217	217
NW-10-2	Establishment and Operation of hydrological Monitoring Network for Recharge Dams	3,146	947	920	1,065	115	99
TOTAL	DEVELOPMENT BUDGET TOTAL	135,518	20,132	23,117	27,835	29,530	34,896

Table 5.2.4 Annual Budget of Agricultural Research Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	ANNUAL BUDGET				
			1991	1992	1993	1994	1995
NAR-1	SUPPORT FOR AGRICULTURAL RESEARCH STATIONS	2,710	1,935	648	395	325	315
NAR-1-1	AGRICULTURAL RESEARCH FACILITIES AT RUMAIS	600	200	100	100	100	100
NAR-1-2	AGRICULTURAL RESEARCH FACILITIES AT JEMAH	600	350	70	70	60	50
NAR-1-3	AGRICULTURAL RESEARCH FACILITIES AT SALALAH	875	350	130	65	65	65
NAR-1-4	AGRICULTURAL RESEARCH FACILITIES AT SOHAR	600	60	300	120	60	60
NAR-1-5	AGRICULTURAL RESEARCH FACILITIES AT SHARQIYA	235	75	40	40	40	40
NAR-1-6	AGRICULTURAL RESEARCH FACILITIES AT DHAHIRA						
NAR-2	ESTABLISHMENT OF NEW RESEARCH UNITS AND LABORATORIES	3,075	875	690	410	580	520
NAR-2-1	AGRICULTURAL MACHINERY RESEARCH UNIT AT RUMAIS	475	215	65	65	65	65
NAR-2-2	TOXICOLOGY LABORATORY (RUMAIS)	235	75	100	30	15	15
NAR-2-3	SEED AND TUBER PRODUCTION RESEARCH UNIT (RUMAIS)	70		20	20	20	10
NAR-2-4	CENTRAL SOIL, PLANT AND WATER ANALYSIS LABORATORY (RUMAIS)	600	300	75	75	75	75
NAR-2-5	LIBRARY AND DOCUMENTATION CENTER (RUMAIS)	240		160	30	25	25
NAR-2-6	PLANT WATER REQUIREMENT DETERMINATION UNIT (SALALAH)	100		100			
NAR-2-7	MEDICAL AND PERFUME PLANT RESEARCH UNIT (SALALAH)						
NAR-2-8	DISEASE AND PEST FORECASTING UNIT (RUMAIS)	100			50	50	
NAR-2-9	SALT TOLERANT PLANTS AND HALOPHYTES RESEARCH UNITS (RUMAIS)	200				100	100
NAR-2-10	HONEY BEE LABORATORY (RUMAIS)	140	50	25	25	20	20
NAR-2-11	HONEY BEE RESEARCH UNIT (SALALAH)	65	20	15	10	10	10
NAR-2-12	HONEY BEE RESEARCH UNIT (JEMAH)	50	15	15	10	5	5
NAR-2-13	DATE PALM RESEARCH UNIT (RUMAIS)	300	200	115	95	195	195
NAR-3	DEVELOPMENT AND ESTABLISHMENT OF EXPERIMENTAL FARMS AND NURSERIES	1,040	120	270	295	195	180
NAR-3-1	DEVELOPMENT OF ARABIC COFFEE EXPERIMENTAL FARM IN SALALAH	135			50	45	40
NAR-3-2	DEVELOPMENT OF NURSERIES AT RUMAIS AND BARKA	220	120	40	30	20	10
NAR-3-3	DEVELOPMENT OF NURSERIES AT SOHAR	100		40	20	20	20
NAR-3-4	DEVELOPMENT OF NURSERIES IN INTERIOR	300		150	80	40	30
NAR-3-5	DEVELOPMENT OF NURSERIES IN SOUTHERN REGION	100		40	20	20	20
NAR-3-6	DEVELOPMENT OF EXPERIMENTAL FARM AT WADI QURIYAT	115			65	25	25
NAR-3-7	DEVELOPMENT OF EXPERIMENTAL FARM AT MUSANDAM	70			30	25	15
NAR-3-8	DEVELOPMENT OF EXPERIMENTAL FARM AT SHARQIYA						
NAR-3-9	DEVELOPMENT OF EXPERIMENTAL FARM AT DHAHIRA						
NAR-4	FORESTRY-IMPROVEMENT PROGRAM	1,000	200	200	200	200	200
NAR-5	ESTABLISHMENT OF LOCUST SURVEY AND CENTRAL UNIT (RUMAIS, ALL REGION)	1,000	200	200	200	200	200
NAR-6	SOIL SURVEYS	800		200	200	200	200
TOTAL	DEVELOPMENT BUDGET TOTAL	9,625	2,430	2,200	1,700	1,700	1,595

Table 5.2.5 Annual Budget of Agricultural Extension Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO.	TOTAL BUDGET (1000RO)	ANNUAL BUDGET				
				1991	1992	1993	1994	1995
NAE-1	IMPROVEMENT AND DEVELOPMENT OF EXTENSION CENTERS AND FACILITIES		3,520	764	794	744	634	584
NAE-1-1	ESTABLISHMENT OF EXTENSION CENTERS IN REMOTE AREA	A	400	100	150	100	50	
NAE-1-2	IMPROVEMENT OF EXTENSION CENTER FACILITIES	A	1,920	354	344	344	284	284
NAE-1-3	DEVELOPMENT OF AGRICULTURAL TECHNOLOGY INFORMATION UNITS (ATIUI)	A	1,500	300	300	300	300	300
NAE-2	ESTABLISHMENT OF DEVELOPMENT SUPPORT COMMUNICATION CENTER (DSCC)	A	1,100	702	258	212	12	6
NAE-3	TRAINING OF RESEARCHERS, EXTENSION STAFF AND STATISTICS STAFF	A	1,500	689	204	204	204	204
NAE-4	INTENSIVE EXTENSION GUIDANCE PROGRAM		7,910	1,582	1,582	1,582	1,582	1,582
NAE-4-1	SUPPORTING KEY FARMER EXTENSION PROGRAM	A	1,500	300	300	300	300	300
NAE-4-2	DATE PALM REHABILITATION & IMPROVEMENT PROGRAM	A	5,910	1,182	1,182	1,182	1,182	1,182
NAE-4-3	PROVISION OF INPUTS FOR EXPERIMENTAL PURPOSES	A	500	100	100	100	100	100
TOTAL	DEVELOPMENT BUDGET TOTAL		14,123	3,737	2,838	2,742	2,432	2,376

Table 5.2.6 Annual Budget of Agricultural Production Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	ANNUAL BUDGET				
			1991	1992	1993	1994	1995
NAA-1	COLLECTION AND ORGANIZATION OF AGRICULTURAL STATISTICS	1,300	324	630	225	121	
NAA-1-1	AGRICULTURAL CENSUS	700	300	350	50		
NAA-1-2	ANNUAL UPDATE OF IMPORTANT AGRICULTURAL STATISTICS	600	84	280	175	121	
NAA-2	AGRICULTURAL EXHIBITION AND FESTIVAL	700	275	50	63	262	50
NAA-2-1	INTERNATIONAL AGRICULTURE AND FOOD EXHIBITION	450	225		13	212	
NAA-2-2	DOMESTIC AGRICULTURAL FESTIVAL	250	50	50	50	50	50
NAA-3	NATIONAL PROJECT FOR PLANT PROTECTION AND AERIAL SPRAY	5,000	1,000	1,000	1,000	1,000	1,000
NAA-4	AGRICULTURAL TECHNOLOGY TRANSFER PROJECT TO FARMERS	5,000	1,000	1,000	1,000	1,000	1,000
NAA TOTAL		12,060	2,659	2,680	2,288	2,383	2,050
NAQ-1	DEVELOPMENT & IMPROVEMENT OF PLANT QUARANTINE	900	200	400	100	200	
TOTAL	DEVELOPMENT BUDGET TOTAL	12,960	2,859	3,080	2,388	2,583	2,050

Table 5.2.7 Annual Budget of Livestock Sector - 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO.	TOTAL BUDGET (1000000)	ANNUAL BUDGET				
				1991	1992	1993	1994	1995
NLL-1	Rangeland Revegetation Project in Southern Region		2,352	576	400	400	400	400
NLL-1-1	① Establishment of Rangeland Management	A	352	176	176			
NLL-1-2	② Grazing Control	B	2,000	400	400	400	400	400
NLL-2	Animal Health & Disease Control Project		16,425	3,237	2,971	3,237	3,650	3,530
NLL-2-1	① Development of New Quarantines	A	1,975	395	395	395	395	395
NLL-2-1-1	① Animal Clinics Improvements	A	1,138	238	238	238	238	238
NLL-2-2	② Laboratory Development	A	669	306	20	20	293	30
NLL-2-3	③ CCPP Vaccine Development	C	98	30	30	30	30	30
NLL-2-4	④ National Vaccination	A	3,382	1,369	1,535	1,831	1,971	2,116
NLL-2-5	⑤ Supplies of Veterinary Equipment	B	3,000	600	600	600	600	600
NLL-2-6	⑥ Brucellosis Control in South	B	621	123	123	123	123	123
NLE-1	Livestock Extension Development		482	196	30	30	196	30
NLE-1-1	① Extension Method Improvement	A	150	30	30	30	30	30
NLE-1-2	② Demonstration of Using Equipment							
NLE-1-2-1	②-1 Visual Extension							
NLE-1-2-2	②-2 Establishment of Demonstration Unit							
NLE-1-2-3	②-3 Training Center Development	B	332	166			166	
NLR-1	Livestock Research Development		4,053	837	792	792	792	837
NLR-1-1	① Development of Livestock Research Centers	A	2,025	400	400	400	400	400
NLR-1-2	② Research Centers Management Consultancy	A	2,028	437	392	392	392	437
NLM-1	Livestock Marketing Improvement Project		6,371	575	1,061	872	1,734	1,529
NLM-1-1	① Company for Livestock Products	A	1,516	50	366	280	280	280
NLM-1-2	② Cattle Fattening	B	188				50	138
NLM-1-3	③ Out Meat Processing	C	487				171	316
NLM-1-4	④ Milk Collecting and Processing	B	1,181	25	211	88	729	126
NLM-1-5	⑤ Hides and Skins Development	C	192					192
NLM-1-6	⑥ Cattle Destocking Subsidy	A	2,580	500	500	500	500	580
NLM-1-7	⑦ Marketing Promotion	C	395	84	84	84	84	83
NLL-3	Livestock Input Company Project		1,359		376	983		
NLL-4	Small Farm Development Support Project		15,285	3,035	3,038	3,045	3,078	3,068
NLL-4-1	① Smallholder Poultry Production	A	8,385	1,761	1,754	1,772	1,774	1,784
NLL-4-2	② Intensive Livestock Production	A	6,370	1,274	1,274	1,274	1,274	1,274
NLL-4-3	③ A.I. Services for Dairy Cow	B	50	30			30	
NLL-5	Livestock Specialized Services		1,222	778	111	111	111	111
NLA-1-1	① Livestock Census	B	524	524				
NLL-5-1	② National Disease Survey	B	55	11	11	11	11	11
NLM-2	③ Marketing Survey	A	143	143				
NLL-5-2	④ Consultancy Services (Study)	A	500	100	100	100	100	100
Total			47,546	9,364	9,545	9,471	9,961	9,585
	Percentage		19.1	20.1	19.9	21.0	20.0	

Table 5.2.8 Annual Budget of Distribution Sector - 5-Year Plan

DESCRIPTION PROJECT NUMBER	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO. 5 YEAR					ANNUAL BUDGET				
			TOTAL	1991	1992	1993	1994	1995				
ND-1	NM-1	ESTABLISHMENT OF WHOLESAL MARKET (STUDY)	A	322	243	40	38					
	NM-1-1	STUDY ON ESTABLISHING WHOLESAL MARKET		218	210							
	NM-1-2	STUDY ON EXPANSION OF DISTRIBUTION VOLUME IN PAMAP		33	33							
	NM-1-3	IMPLEMENTATION ON EXPANSION OF DISTRIBUTION VOLUME IN PAMAP										
	NM-1-4	TRAINING STAFFS OF PAMAP FOR IMPLEMENTATION OF THE PILOT		79		48	39					
	NM-2	PILOT WHOLESAL MARKET	A	524			72	388	72			
	NM-2-1	OPERATION OF PILOT WHOLESAL MARKET (SUPPORT BY CONSULTANT)		216			72	72	72			
	NM-2-2	DETAIL DESIGN ON WHOLESAL MARKET		308				308				
	NM-3	CONSTRUCTION AND OPERATION OF WHOLESAL MARKET	A	2,818				79	2,731			
	NM-3-1	CONSTRUCTION OF WHOLESAL MARKET		2,526					2,526			
ND-2	NM-3-2	CONSTRUCTION OF WHOLESAL MARKET (SUPERVISION BY CONSULTANT)		126					126			
	NM-3-3	TRAINING STAFFS FOR OPERATION OF WHOLESAL MARKETS (SUPPORT)		158				79	79			
	SUBTOTAL			3,656	243	40	111	459	2,883			
	NM-4	BASIC DATA COLLECTING PROGRAM	A	240	158	66	12					
ND-3	NM-4-1	BASIC DATA COLLECTING PROGRAM (STUDY)		98	98							
	NM-4-2	BASIC DATA COLLECTING PROGRAM (EQUIPMENT)		43	43							
	NM-4-3	BASIC DATA COLLECTING PROGRAM (SUPPORT BY CONSULTANT)		47	23	12						
	NM-4-4	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST		26								
	NM-4-5	INTRODUCTION FOR PRICING POLICY (STUDY)		26	26							
ND-4	NM-5	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST (SUPPORT)	A	144		48	48					
	NM-6	MEASURES FOR ADJUSTMENT OF SUPPLY AND DEMAND (STUDY)	A	60			60					
ND-3	SUBTOTAL			444	150	114	60	120				
	NM-7	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (STUDY)	A	160		160						
	NM-8	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS	A	1,060			320	320	420			
	NM-8-1	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (SUPPORT)		60			20	20	20			
ND-4	NM-8-2	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (EQUIPMENT)		1,000			300	300	400			
	SUBTOTAL			1,220		160	320	320	420			
TOTAL	NM-9	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAMAP (STUDY)	A	468	180	288						
	NM-10	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAMAP	A	9,609			3,203	3,203	3,203			
	SUBTOTAL			10,077	180	288	3,203	3,203	3,203			
	TOTAL	DEVELOPMENT BUDGET TOTAL		15,397	573	602	3,694	4,182	6,426			

Table 5.2.9 Annual Budget of Agricultural Produce Processing Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	ANNUAL BUDGET				
			1991	1992	1993	1994	1995
NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	5,100	100	2,500	2,500		
NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	1,134	148	430	400	150	
NP-3	Establishment of Pickling and Vinegar-Processing Plant	1,014	132	1,482			
NP-4	Establishment of Coconut-Processing Plant Coconut Farm	2,826	1,390	152	412	472	200
	Coconut-Processing Plant	2,100	1,390	130	160	220	200
		526		22	252	252	
TOTAL	DEVELOPMENT BUDGET TOTAL	10,474	1,778	4,554	3,318	622	200

Table 5.2.10 Annual Budget of Inter-Sectoral Project - 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO.	TOTAL BUDGET (1000RO)	ANNUAL BUDGET					
				1991	1992	1993	1994	1995	
NI-1	Integrated Agricultural Development Project in Nejd 1) Pilot Farm (50ha) 2) Main Development Project (450ha)	A	13,242	1,655	1,655	1,655	1,655	3,311	4,966
NI-2	Improvement and Maintenance of MAF Facilities 1) Ministry Building 2) Office Building for Directorate General of Agriculture in 6 Regions 3) Separate Consolidated Allocation for All Consultancies	A	16,991	5,895	5,896	3,600	800	800	800
OI-1	Citizen's Compensation against Natural Crisis	A	1,500	300	300	300	300	300	300
OI-2	Master Plan for Development of Date Palm Cultivation	A	600	600					
TOTAL	DEVELOPMENT BUDGET TOTAL		32,333	8,450	7,851	5,555	4,411	6,066	

Table 5.2.11 Regional Budget Total of 5-Year Plan

SECTOR	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	REGION					MUSANDAR	
				MUSCAT	BATINAH	SHARQIYA	BAKHLIYA	DHAHIRA		JANUBIYA
Irrigation and Dam	NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System	135,518	1,982	55,723	15,310	32,474	19,722	7,718	2,527
	NW-2	Subsidy for New Irrigation System Project	19,800	11,160	1,440	2,100	1,980			
	NW-3	Leak Framework for Agricultural Water Use	16,250	325	8,595	2,113	2,375	1,469	975	163
	NW-4	Seepage Dams	170	7	88	26	24	17	5	3
	NW-5	Sub-surface (Underground) Dams	48,025	325	23,618	4,018	8,520	7,993	1,254	2,250
	NW-6	Artaj Wells	2,500	300	300	35	2,895	33	35	
	NW-7	Wells	29,678	1,220	9,680	5,002	11,190	5,588		30
	NW-8	Springs	9,000	60	2,320	2,200	1,620	2,060	120	
	NW-9	Erosion Control and Protection of Agricultural Land against Floods	1,369		70	50	3,700		25	
	NW-10	Survey and Monitoring	4,264	45	1,881	427	844	549	207	111
Agricultural Research	NAR-1	Support for Agricultural Research Stations	9,625	80	5,150	895	1,425	280	1,885	110
	NAR-2	Establishment of New Research Units and Laboratories	2,710		1,200	235	600		675	
	NAR-3	Development and Establishment of Experimental Farms and Nurseries	3,875		2,820		50		165	
	NAR-4	Forestry-Improvement Program	1,040		320		415		235	70
	NAR-5	Establishment of Locust Survey and Control Unit	1,000	40	250	150	140	100	300	20
	NAR-6	Soil Surveys	800	48	520	150	140	100	300	20
Agricultural Extension	NAE-1	Improvement and Development of Extension Centers and Facilities	14,123	1,661	4,020	2,524	2,530	1,886	755	568
	NAE-2	Establishment of Development Support Communication Center (DSCC)	3,520	172	840	561	737	643	283	284
	NAE-3	Training of Researchers, Extension Staff and Statistics Staff	1,503		785	133	163	143	217	44
	NAE-4	Intensive Extension Guidance Program	7,910	260	2,425	1,920	1,320	1,200	255	240
	NAE-5	Collection and Organization of Agricultural Statistics	12,860	1,127	6,115	1,840	1,326	1,272	1,217	263
Agricultural Production	NAP-1	Agricultural Exhibitions and Festivals	1,360	41	580	284	190	136	82	27
	NAP-2	National Project for Plant Protection and Aerial Spraying	700	486	36	36	36	36	36	36
	NAP-3	Agricultural Technology Transfer to Farmers Project	5,000	150	2,700	700	550	450	350	100
	NAP-4	Development and Improvement of Plant Quarantine	5,000	150	2,700	700	550	450	350	100
	NAP-5	Development and Improvement of Plant Quarantine	300	300						
	NAP-6	Development and Improvement of Plant Quarantine	47,545	985	9,530	4,415	9,353	4,895	20,323	355
	NAP-7	Rangeland Revegetation Project in Southern Region	2,352							
	NAP-8	Animal Health and Disease Control Project	16,425	366	3,841	1,519	1,225	2,867	6,046	561
	NAP-9	Livestock Extension Development Project	482	5	204	18	15	19	219	5
	NAP-10	Livestock Research Development Project	4,050		1,599		373		1,381	
Distribution	ND-1	Livestock Marketing Improvement Project	6,371	10	143	72	85	72	5,392	10
	ND-2	Livestock Inbred Company Project	1,359	370			893			
	ND-3	Small Farm Development Support Project	15,205	191	3,435	2,659	2,959	1,782	3,907	342
	ND-4	Supply and Demand Forecast of Agricultural Produce	1,222	37	386	147	122	147	428	37
	ND-5	Livestock Specialized Services Program	15,397	8,706	3,806	1,161	1,863	619	1,811	81
Agricultural Produce Processing	NP-1	Establishment of Wholesale Market	3,658	3,577	79					
	NP-2	Supply and Demand Forecast of Agricultural Produce	444	444						
	NP-3	Establishment of Shipping Organization for Farmers	1,220	185	397	165	165	165	165	165
	NP-4	Fertilization of SAHAP	18,977	2,520	3,371	937	389	455	1,746	91
Inter-Sectoral	NI-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	18,474	1,784	3,325	785	1,209	510	2,773	182
	NI-2	Establishment of Packing and Vinegar-Processing Plant	5,100	204	2,562	765	714	510	153	102
	NI-3	Establishment of Dates, Lines and Tomatoes of Dates, Lines and Tomatoes	1,134	173	466		495			
	NI-4	Establishment of Agricultural Inputs and Services	1,514	807						
	NI-5	Establishment of Bleaching and Vinegar-Processing Plant	2,626							
	NI-6	Establishment of Coconut-Processing Plant	32,333	5,435	4,422	2,165	2,184	1,880	14,975	1,372
	NI-7	Integrated Agricultural Development Project in Naid	13,242							
	NI-8	Improvement and Maintenance of NSF Facilities	16,991	5,351	3,330	1,850	1,810	1,650	1,670	1,330
	NI-9	Artificial Rainfall Project	0							
	OI-1	Citizen's Compensation against Natural Crisis	1,500	60	780	255	210	150	45	30
OI-2	Master Plan for Development of Date Palm Cultivation	800	24	312	30	84	60	18	12	
Total			277,976	19,159	92,841	28,744	49,485	31,134	51,555	6,058

Table 5.2.12 Regional Budget of Irrigation and Dam Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	5 YEAR TOTAL (1000RO)	REGION					TOTAL
			MUSCAT	SALALAH	SHARBIYA	BAHARIYA	JANUBIYA	
NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System Study Phase (P/S.F/S) Pilot Project	18,800	11,100	1,400	2,100	1,800	3,120	
NW-2	Subsidy for New Irrigation System Project for 30,000ha	16,850	8,936	2,113	2,275	1,483	375	
NW-3	Legal Framework for Agricultural Water Use	170	88	26	24	17	5	
NW-4	Recharge Dams	46,025	29,618	4,810	8,528	7,983	1,254	
NW-4-1	Groundwater-Recharge Scheme Study Phase	3,750	300	300	720	420	100	
NW-4-2	Construction Phase	38,200	20,800	3,000	7,200	4,200	1,030	
NW-4-3	Maintenance and Improvement of Existing and Newly Constructed Dams	2,325	1,033	194	541	323	129	
NW-4-4	Recharged Water Effective Use Pilot Project (Study)	250	75	25	25	50	25	
NW-4-5	Identification of New Groundwater-Recharge Schemes	3,500	500	500	500	500	3,000	
NW-5	Sub-Surface (Underground) Dams	2,500	300	35	2,095	35	35	
NW-6	Reconnaissance Study	75	35	10	10	10	10	
NW-7	Preliminary Study	150	50	25	25	25	25	
NW-8	Feasibility Study	300	200	100	100	100	100	
NW-9	Pilot Project (Construction)	1,900	1,900	1,900	1,900	1,900	1,900	
NW-10	Observation and Monitoring	75	15	15	60	60	60	
NW-6	Af1a)	29,670	1,220	6,650	5,800	11,130	5,560	
NW-6-1	Repair and Maintenance of Af1a]	24,000	1,200	5,200	3,600	9,120	4,300	
NW-6-2	Distribution System Improvement Pilot Project in Oasin(Study)	750	150	150	150	300	150	
NW-6-3	Improvement and Maintenance of Major Af1a)	320	20	250	250	270	130	
NW-7	Construction	4,000	1,000	1,000	1,500	500	500	
NW-7-1	Wells	9,000	2,800	2,300	1,620	2,000	120	
NW-7-2	Subsidy for Repair of Existing Open Wells	3,000	50	1,600	400	420	260	
NW-8	Assistant Wells for Af1a]	9,000	1,200	1,000	1,200	1,300	300	
NW-8-1	Springs	1,869					1,869	
NW-8-2	Improvement of Springs	1,750					1,750	
NW-8-3	Annual Maintenance of Open Channel for Spring	210					210	
NW-9	Erosion Control and Protection of Agricultural Land against Floods	3,870	70	50	3,700	25	25	
NW-10	Study Phase	270	70	50	100	25	25	
NW-10-1	Construction Phase	3,600			3,600			
NW-10-2	Survey and Monitoring	4,284	45	1,291	427	844	540	
NW-10-3	Long-term Plan for Aerial Photography and Ortho-photo Mapping	1,118	45	583	166	157	112	
NW-10-4	Establishment and Operation of hydrological Monitoring Network for Recharge Dams	3,140	1,338	262	787	437	175	
TOTAL	DEVELOPMENT BUDGET TOTAL	135,516	1,982	55,733	15,310	32,474	19,722	7,710
							2,597	

Table 5.2.13 Regional Budget of Agricultural Research Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	REGION					
			MUSCAT	BATINAH	SHARQIYA	DAKHLIYA	DHAHIRA	JANUBIYA
NAR-1	SUPPORT FOR AGRICULTURAL RESEARCH STATIONS	2,710		1,200	235	600		675
NAR-1-1	AGRICULTURAL RESEARCH FACILITIES AT RUMAIS	600		600				
NAR-1-2	AGRICULTURAL RESEARCH FACILITIES AT JEMAH	600			600			675
NAR-1-3	AGRICULTURAL RESEARCH FACILITIES AT SALALAH	675						
NAR-1-4	AGRICULTURAL RESEARCH FACILITIES AT SOHAR	600						
NAR-1-5	AGRICULTURAL RESEARCH FACILITIES AT SHARQIYA	235			235			
NAR-1-6	AGRICULTURAL RESEARCH FACILITIES AT DHAHIRA							
NAR-2	ESTABLISHMENT OF NEW RESEARCH UNITS AND LABORATORIES	3,075		2,600		50		105
NAR-2-1	AGRICULTURAL MACHINERY RESEARCH UNIT AT RUMAIS	475		475				
NAR-2-2	TOXICOLOGY LABORATORY (RUMAIS)	235		235				
NAR-2-3	SEED AND TUBER PRODUCTION RESEARCH UNIT (RUMAIS)	70		70				
NAR-2-4	CENTRAL SOIL, PLANT AND WATER ANALYSIS LABORATORY (RUMAIS)	600		600				
NAR-2-5	LIBRARY AND DOCUMENTATION CENTER (RUMAIS)	240		240				
NAR-2-6	PLANT WATER REQUIREMENT DETERMINATION UNIT (SALALAH)	100						100
NAR-2-7	MEDICAL AND PERFUME PLANT RESEARCH UNIT (SALALAH)							
NAR-2-8	DISEASE AND PEST FORECASTING UNIT (RUMAIS)	100		100				
NAR-2-9	SALT TOLERANT PLANTS AND HALOPHYTES RESEARCH UNITS (RUMAIS)	200		200				
NAR-2-10	HONEY BEE LABORATORY (RUMAIS)	140		140				
NAR-2-11	HONEY BEE RESEARCH UNIT (SALALAH)	65						65
NAR-2-12	HONEY BEE RESEARCH UNIT (JEMAH)	50			50			
NAR-2-13	DATE PALM RESEARCH UNIT (RUMAIS)	800		800				
NAR-3	DEVELOPMENT AND ESTABLISHMENT OF EXPERIMENTAL FARMS AND NURSERIES	1,040		320		415		235
NAR-3-1	DEVELOPMENT OF ARABIC COFFEE EXPERIMENTAL FARM IN SALALAH	135						135
NAR-3-2	DEVELOPMENT OF NURSERIES AT RUMAIS AND BARKA	220		220				
NAR-3-3	DEVELOPMENT OF NURSERIES AT SOHAR	100		100				
NAR-3-4	DEVELOPMENT OF NURSERIES IN INTERIOR	300			300			
NAR-3-5	DEVELOPMENT OF NURSERIES IN SOUTHERN REGION	100						100
NAR-3-6	DEVELOPMENT OF EXPERIMENTAL FARM AT WADI GURIYAT	115				115		
NAR-3-7	DEVELOPMENT OF EXPERIMENTAL FARM AT MUSANDAM	70						70
NAR-3-8	DEVELOPMENT OF EXPERIMENTAL FARM AT SHARQIYA							
NAR-3-9	DEVELOPMENT OF EXPERIMENTAL FARM AT DHAHIRA							
NAR-4	FORESTRY-IMPROVEMENT PROGRAM	1,000		40	150	140	100	300
NAR-5	ESTABLISHMENT OF LOCUST SURVEY AND CENTRAL UNIT (RUMAIS, ALL REGION)	1,000		40	520	150	140	30
NAR-6	SOIL SURVEYS	800			160	80	80	480
TOTAL	DEVELOPMENT BUDGET TOTAL	9,625	80	5,150	695	1,425	280	1,885
								110

Table 5.2.14 Regional Budget of Agricultural Extension Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO.	TOTAL BUDGET (1000RO)	REGION						
				MUSCAT	BATINAH	SHARQIYADAKHLIYADHAKHIRA	JANUBIYAMUSANDAM	JANUBIYAMUSANDAM		
NAE-1	IMPROVEMENT AND DEVELOPMENT OF EXTENSION CENTERS AND FACILITIES		3,520	172	840	551	737	643	283	284
NAE-1-1	ESTABLISHMENT OF EXTENSION CENTERS IN REMOTE AREA	A	400			50	100	150		100
NAE-1-2	IMPROVEMENT OF EXTENSION CENTER FACILITIES	A	1,620	72	540	211	287	243	183	84
NAE-1-3	DEVELOPMENT OF AGRICULTURAL TECHNOLOGY INFORMATION UNITS (ATIU)	A	1,500	100	300	300	350	250	100	100
NAE-2	ESTABLISHMENT OF DEVELOPMENT SUPPORT COMMUNICATION CENTER (DSCC)	A	1,190							
NAE-3	TRAINING OF RESEARCHERS, EXTENSION STAFF AND STATISTICS STAFF	A	1,503	39	765	133	183	142	217	44
NAE-4	INTENSIVE EXTENSION GUIDANCE PROGRAM		7,910	250	2,425	1,900	1,630	1,200	255	240
NAE-4-1	SUPPORTING KEY FARMER EXTENSION PROGRAM	A	1,500	50	700	225	210	150	135	30
NAE-4-2	DATE PALM REHABILITATION & IMPROVEMENT PROGRAM	A	5,910	200	1,500	1,600	1,350	1,000	60	200
NAE-4-3	PROVISION OF INPUTS FOR EXPERIMENTAL PURPOSES	A	500	10	225	75	70	50	60	10
TOTAL	DEVELOPMENT BUDGET TOTAL		14,123	1,661	4,030	2,594	2,530	1,986	755	568

Table 5.2.15 Regional Budget of Agricultural Production Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	REGION						
			MUSCAT	BATINAH	SHARQIYADAKHLIYADHAKHIRA	JANUBIYAMUSANDAM	JANUBIYAMUSANDAM		
NAA-1	COLLECTION AND ORGANIZATION OF AGRICULTURAL STATISTICS	1,360	41	620	204	190	136	82	27
NAA-1-1	AGRICULTURAL CENSUS	700	21	350	105	98	70	42	14
NAA-1-2	ANNUAL UPDATE OF IMPORTANT AGRICULTURAL STATISTICS	660	20	330	99	92	66	40	13
NAA-2	AGRICULTURAL EXHIBITION AND FESTIVAL	700	486	36	36	36	36	36	36
NAA-2-1	INTERNATIONAL AGRICULTURE AND FOOD EXHIBITION	450	450						
NAA-2-2	DOMESTIC AGRICULTURAL FESTIVAL	250	36	36	36	36	36	36	36
NAA-3	NATIONAL PROJECT FOR PLANT PROTECTION AND AERIAL SPRAY	5,000	150	2,700	700	550	450	350	100
NAA-4	AGRICULTURAL TECHNOLOGY TRANSFER PROJECT TO FARMERS	5,000	150	2,700	700	550	450	350	100
NAA TOTAL		12,060	827	6,116	1,640	1,326	1,072	817	263
NAQ-1	DEVELOPMENT & IMPROVEMENT OF PLANT QUARANTINE	900	300					200	400
TOTAL	DEVELOPMENT BUDGET TOTAL	12,960	1,127	6,116	1,640	1,326	1,272	1,217	263

Table 5.2.16 Regional Budget of Livestock Sector - 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRI 10.	TOTAL BUDGET (1000R0)	REGIONWISE				
				MUSCAT	BATINAH	SHARQIYA	ADHHAHIRA	JANUBIYAMUSANDAM
NLL-1	Rangeland Revegetation Project in Southern Region		2,352					2,352
NLL-1-1	Establishment of Rangeland Management	A	352					352
NLL-1-2	Grazing Control	B	2,000					2,000
NLL-2	Animal Health & Disease Control Project		16,429	366	3,841	1,519	1,226	2,867
NLL-2-1	Development of New Quarantines	A	1,915	12	205			1,385
NLL-2-1-1	Animal Clinics Improvements	A	1,138		189	93	31	813
NLL-2-2	Laboratory Development	A	659		386			283
NLL-2-3	CCPP Vaccine Development	C	50		90			
NLL-2-4	National Vaccination	A	8,382	266	2,221	1,065	268	1,066
NLL-2-5	Supplies of Veterinary Equipment	B	3,000	90	750	388	388	360
NLL-2-6	Brucellosis Control in South	B	621					621
NLE-1	Livestock Extension Development		483	5	204	13	15	18
NLE-1-1	Extension Method Improvement	A	150	5	38	18	15	18
	Demonstration of Using Equipment							93
	Visual Extension							
	Establishment of Demonstration Unit							
NLE-1-2	Training Center Development	B	332		168			168
NLR-1	Livestock Research Development		4,050		1,556		973	1,381
NLR-1-1	Development of Livestock Research Centers	A	2,000		750		500	750
NLR-1-2	Research Centers Management Consultancy	A	2,050		946		473	631
NLM-1	Livestock Marketing Improvement Project		6,371	10	148	72	66	2
NLM-1-1	Company for Livestock Products	A	1,518					1,518
NLM-1-2	Cattle Fattening	B	190					190
NLM-1-3	Cut Meat Processing	C	487					487
NLM-1-4	Milk Collecting and Processing	B	1,161		65	32	32	1,280
NLM-1-5	Hides and Skins Development	C	182					182
NLM-1-6	Cattle Destocking Subsidy	A	3,569					2,586
NLM-1-7	Marketing Promotion	C	395	10	34	43	34	117
NLL-3	Livestock Input Company Project	B	1,359	276			933	
NLL-4	Small Farm Development Support Project		15,255	191	3,435	2,653	2,953	1,722
NLL-4-1	Smallholder Poultry Production	A	3,855		1,842	1,895	2,302	1,618
NLL-4-2	Intensive Livestock Production	A	8,370	131	1,533	764	637	764
NLL-4-3	A.I. Services for Dairy Cow	B	80				80	
NLL-5	Livestock Specialized Services		1,222	37	306	147	182	147
NAA-1-1	Livestock Census	B	524	18	131	63	52	63
NLL-5-1	National Disease Survey	B	56	2	14	7	6	7
NLM-2	Marketing Survey	A	148	4	36	17	14	17
NLL-5-2	Consultancy Services (Study)	A	588	15	125	60	50	60
	Total		47,548	985	9,629	4,415	6,353	4,886
	Percentage			2.1	20.3	9.3	13.4	10.3
								42.7
								2.0

Table 5.2.17 Regional Budget of Distribution Sector - 5-Year Plan

DESCRIPTION NUMBER	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO. 5 YEAR TOTAL	REGION								
				MUSCAT	BATAINAH	SHARQIYAH	DAKHILIYAH	HAILIYAH	JANUBIYAH	TOTAL		
ND-1	NN-1	ESTABLISHMENT OF WHOLESale MARKET (STUDY)	A	322								
	NN-1-1	STUDY ON ESTABLISHING WHOLESale MARKET		210								
	NN-1-2	STUDY ON EXPANtion OF DISTRIBUTION VOLUME IN PAPAP		33								
	NN-1-3	IMPLEMENTATION ON EXPANtion OF DISTRIBUTION VOLUME IN PAPAP		-								
ND-2	NN-1-4	TRAINING STAFFS OF PAPAP FOR IMPLEMENTATION OF THE PILOT		79								
	NN-2	PILOT WHOLESale MARKET	A	524								
	NN-2-1	OPERATION OF PILOT WHOLESale MARKET (SUPPORT BY CONSULTANT)		216								
	NN-2-2	DETAIL DESIGN ON WHOLESale MARKET		308								
ND-3	NN-3	CONSTRUCTION AND OPERATION OF WHOLESale MARKET	A	2,810	2,731	79						
	NN-3-1	CONSTRUCTION OF WHOLESale MARKET		2,526	2,526							
	NN-3-2	PHASE-1 MUTTRAH		126	126							
	NN-3-3	CONSTRUCTION OF WHOLESale MARKET (SUPERVISION BY CONSULTANT)										
ND-4	NN-3-8	TRAINING STAFFS FOR OPERATION OF WHOLESale MARKETS (SUPPORT)		158	79	79						
	SUBTOTAL			3,656	3,577	79						
	NN-4	BASIC DATA COLLECTING PROGRAM	A	240	240							
	NN-4-1	BASIC DATA COLLECTING PROGRAM (STUDY)		98	98							
ND-5	NN-4-2	BASIC DATA COLLECTING PROGRAM (EQUIPMENT)		43	43							
	NN-4-3	BASIC DATA COLLECTING PROGRAM (SUPPORT BY CONSULTANT)		47	47							
	NN-4-4	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORCAST		26	26							
	NN-4-5	INTRODUCTION FOR PRICING POLICY (STUDY)		26	26							
ND-6	NN-5	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORCAST (SUPPORT)	A	144	144							
	NN-6	MEASURES FOR ADJUSTMENT OF SUPPLY AND DEMAND (STUDY)	A	60	60							
	SUBTOTAL			444	444							
	NN-7	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (STUDY)	A	160	21	53	21	21	21	21	21	21
ND-7	NN-8	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS	A	1,060	143	343	143	143	143	143	143	
	NN-8-1	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (SUPPORT)		60	10	10	10	10	10	10	10	
	NN-8-2	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (EQUIPMENT)		1,000	133	333	133	133	133	133	133	
	SUBTOTAL			1,220	164	386	164	164	164	164	164	
ND-8	NN-9	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAPAP (STUDY)	A	468	117	157	46	42	21	81	81	
	NN-10	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAPAP	A	9,609	2,403	3,214	950	857	434	1,665	37	
	SUBTOTAL			10,077	2,520	3,371	996	899	455	1,746	31	
	TOTAL	DEVELOPMENT BUDGET TOTAL		15,397	6,705	8,846	1,160	1,063	619	1,910	31	

Table 5.2.18 Regional Budget of Agricultural Produce Processing Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	REGION						
			MUSCAT	BATINAH	SHARQIYADAKHLIYADHAKHIRA	JANUBIYAMUSANDAQ	MUSANDAQ		
NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	5,100	204	2,652	765	714	510	153	192
NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	1,134	173	466		495			
NP-3	Establishment of Pickling and Vinegar-Processing Plant	1,614	807						
NP-4	Establishment of Coconut-Processing Plant Coconut Farm Coconut-Processing Plant	2,626 2,100 526						2,626 2,100 526	
TOTAL	DEVELOPMENT BUDGET TOTAL	10,474	1,184	3,925	765	1,209	510	2,779	192

Table 5.2.19 Regional Budget of Inter-Sectoral Projects
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	REGION						
			MUSCAT	BATINAH	SHARQIYADAKHLIYADHAKHIRA	JANUBIYAMUSANDAQ	MUSANDAQ		
NI-1	Integrated Agricultural Development Project in Nejd 1) Pilot Farm (50ha) 2) Main Development Project (350 ha out of 450ha)	13,242 1,655 11,587						13,242 1,655 11,587	
NI-2	Improvement and Maintenance of MAF Facilities 1) Ministry Building 2) Office Building for Directorate General of Agriculture in 6 Regions 3) Separate Consolidated Allocation for All Consultancies	16,091 5,191 7,800 4,000	5,351 5,191	3,330	1,850	1,310	1,650	1,670	1,330
OI-1	Citizen's Compensation against Natural Crisis	1,500	60	780	225	210	150	45	30
OI-2	Master Plan for Development of Date Palm Cultivation	600	24	312	90	84	60	18	12
TOTAL	DEVELOPMENT BUDGET TOTAL	32,333	5,435	4,422	2,165	2,104	1,860	14,975	1,372

Table 5.2.20 Budget Total by Finance Source - 5-Year Plan

SECTOR	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (100000)	STATE GENERAL BUDGET (100000)			SHARED WITH PRIVATE	PRIVATE	OTHERS	REMARKS
				TOTAL	PARAP	OBRAF				
Irrigation and Dam	NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System	151,769	151,769	135,510	16,259				
	NW-2	Subsidy for New Irrigation System Project	16,800	16,800						
	NW-3	Legal Framework for Rectification Water Use	32,500	32,500	16,250	16,250				
	NW-4	Recharge Dams	48,025	48,025	48,025					
	NW-5	Sub-surface (Underground) Dams	2,500	2,500						
	NW-6	ATIs	29,870	29,870	29,870					
	NW-7	Wells	3,000	3,000						
	NW-8	Springs	1,969	1,969						
	NW-9	Erosion Control and Protection of Agricultural Land against Floods	3,870	3,870						
	NW-10	Survey and Monitoring	4,264	4,264						
Agricultural Research	NAR-1	Support for Agricultural Research Stations	9,825	9,825	8,825					
	NAR-2	Establishment of New Research Units and Laboratories	2,710	2,710						
	NAR-3	Development and Establishment of Experimental Farms and Nurseries	1,040	1,040						
	NAR-4	Forestry-Improvement Program	1,000	1,000						
	NAR-5	Establishment of Locust Survey and Control Unit	1,000	1,000						
	NAR-6	Soil Surveys	800	800						
Agricultural Extension	NAE-1	Improvement and Development of Extension Centers and Facilities	14,123	14,123	14,123					
	NAE-2	Establishment of Development Support Communication Center (DSCC)	3,520	3,520						
	NAE-3	Training of Researchers, Extension Staff and Statistics Staff	1,100	1,100						
	NAE-4	Intensive Extension Guidance Program	1,500	1,500						
	NAE-5	Collection and Organization of Agricultural Statistics	7,910	7,910						
Agricultural Production	NAO-1	Agricultural Exhibitions and Festivals	12,960	12,960						
	NAO-2	National Project for Plant Protection and Aerial Spraying	700	700						
	NAO-3	Agricultural Technology Transfer to Farmers Project	5,000	5,000						
	NAO-4	Development and Improvement of Plant Quarantine	800	800						
	NAO-5	Rangeland Revegetation Project in Southern Region	57,003	47,939	46,381	1,166	3,398	5,549	118	
	NAO-6	Animal Health and Disease Control Project	2,635	2,517	2,352	165			118	
	NAO-7	Livestock Extension Development Project	18,425	18,425	15,425					
	NAO-8	Livestock Research Development Project	482	482						
	NAO-9	Livestock Marketing Improvement Project	4,050	4,050						
	NAO-10	Livestock Inbred Company Project	9,882	9,372	5,206	1,168				
Livestock	NLL-1	Small Farm Development Support Project	6,705	1,359	1,359		3,398	2,838		
	NLL-2	Livestock Specialized Services Program	15,512	15,512	15,285	227				
	NLL-3	Establishment of Wholesale Market	15,397	15,397						
	NLL-4	Supply and Demand Forecast of Agricultural Produce	3,656	3,656						
	NLL-5	Establishment of Shipping Organization for Farmers	444	444						
Distribution	ND-1	Fortification of PARAP	1,220	1,220						
	ND-2	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	10,100	5,100						
	ND-3	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	22,112	10,474	10,474		7,149	4,489		
	ND-4	Establishment of Pickling and Vinegar-Processing Plant	1,614	1,614			3,800	2,800		
Agricultural Produce Processing	NP-1	Establishment of Coconut-Processing Plant	5,058	1,134			2,834	1,700		
	NP-2	Establishment of Pickling and Vinegar-Processing Plant	1,614	1,614						
	NP-3	Establishment of Coconut-Processing Plant	4,730	2,626			1,315	789		
	NP-4	Establishment of Coconut-Processing Plant	32,333	32,333						
Inter-Sectors	NI-1	Integrated Agricultural Development Project in Noid	19,242	13,242	13,242					
	NI-2	Improvement and Maintenance of NAF Facilities	16,991	16,991						
	NI-3	Artificial Rainfall Project	1,500	1,500						
	OI-1	Citizen's Compensation against Natural Crisis	600	600						
	OI-2	Register Plan for Development of Date Palm Cultivation	315,321	294,619	261,414	16,642	10,547	10,039	118	
	Total									

Table 5.2.21 Budget of Irrigation and Dam Sector by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	STATE GENERAL BUDGET (1000RO)			SHARED WITH PRIVATE	PRIVATE FINANCE	OTHERS	REMARKS
			TOTAL	MAF	PARAP				
NM-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System Study Phase Pilot Project	19,800	19,800	19,800					
NM-2	Subsidy for New Irrigation System Project for 30,000ha	32,500	32,500	16,250					
NM-3	Legal Framework for Agricultural Water Use	170	170						
NM-4	Recharge Dams	48,025	48,025	48,025					
NM-4-1	Groundwater-Recharge Scheme Study Phase	3,750	3,750	3,750					
NM-4-2	Construction Phase	38,200	38,200	38,200					
NM-4-3	Maintenance and Improvement of Existing and Newly Constructed Dam	2,325	2,325	2,325					
NM-4-4	Recharged Water Effective Use Pilot Project(Study)	250	250	250					
NM-4-5	Identification of New Groundwater Recharge Schemes	3,500	3,500	3,500					
NM-5	Sub-surface (Underground) Dams Reconnaissance Study	2,500	2,500	2,500					
NM-5-1	Preliminary Study	75	75	75					
NM-5-2	Feasibility Study	150	150	150					
NM-5-3	Pilot Project(Construction)	300	300	300					
NM-5-4	Observation and Monitoring	1,975	1,975	1,975					
NM-6	Improvement and Maintenance of Major Afiaj	29,670	29,670	29,670					
NM-6-1	Repair and Maintenance of Afiaj	24,000	24,000	24,000					
NM-6-2	Distribution System Improvement Pilot Project in Oasi(Study)	750	750	750					
NM-6-3	Improvement and Maintenance of Major Afiaj Construction	920	920	920					
NM-7	Wells	9,000	9,000	9,000					
NM-7-1	Subsidy for Repair of Existing Open Wells	3,000	3,000	3,000					
NM-7-2	Assistant Wells for Afiaj	6,000	6,000	6,000					
NM-8	Springs	1,989	1,989	1,989					
NM-8-1	Improvement of Springs	1,750	1,750	1,750					
NM-8-2	Annual Maintenance of Open Channel for Spring	219	219	219					
NM-9	Erosion Control and Protection of Agricultural Land against Floods	3,870	3,870	3,870					
NM-9-1	Study Phase	270	270	270					
NM-9-2	Construction Phase	3,600	3,600	3,600					
NM-10	Survey and Monitoring	4,264	4,264	4,264					
NM-10-1	Long-term Plan for Areal Photography and Orthe-photo Mapping	1,118	1,118	1,118					
NM-10-2	Establishment and Operation of Hydrological Monitoring Network for Recharge Dams	3,146	3,146	3,146					
	TOTAL	151,768	151,768	135,510	16,250				

Table 5.2.22 Budget of Agricultural Research Sector by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	STATE GENERAL BUDGET (1000RO)			SHARED WITH PRIVATE		OTHERS	REMARKS
			TOTAL	MAF	PARAP	GBAF	ODB		
NAR-1	SUPPORT FOR AGRICULTURAL RESEARCH STATIONS	2,710	2,710	2,710					
NAR-1-1	AGRICULTURAL RESEARCH FACILITIES AT RUMAIS	500	500	500					
NAR-1-2	AGRICULTURAL RESEARCH FACILITIES AT JEMMAH	500	500	500					
NAR-1-3	AGRICULTURAL RESEARCH FACILITIES AT SALALAH	675	675	675					
NAR-1-4	AGRICULTURAL RESEARCH FACILITIES AT SOHAR	500	500	500					
NAR-1-5	AGRICULTURAL RESEARCH FACILITIES AT SHARQIYA	235	235	235					
NAR-1-6	AGRICULTURAL RESEARCH FACILITIES AT DHARIRA								
NAR-2	ESTABLISHMENT OF NEW RESEARCH UNITS AND LABORATORIES	3,075	3,075	3,075					
NAR-2-1	AGRICULTURAL MACHINERY RESEARCH UNIT AT RUMAIS	475	475	475					
NAR-2-2	TOXICOLOGY LABORATORY (RUMAIS)	235	235	235					
NAR-2-3	SEED AND TUBER PRODUCTION RESEARCH UNIT (RUMAIS)	70	70	70					
NAR-2-4	CENTRAL SOIL, PLANT AND WATER ANALYSIS LABORATORY (RUMAIS)	500	500	500					
NAR-2-5	LIBRARY AND DOCUMENTATION CENTER (RUMAIS)	240	240	240					
NAR-2-6	PLANT WATER REQUIREMENT DETERMINATION UNIT (SALALAH)	100	100	100					
NAR-2-7	MEDICAL AND PERFUME PLANT RESEARCH UNIT (SALALAH)								
NAR-2-8	DISEASE AND PEST FORECASTING UNIT (RUMAIS)	100	100	100					
NAR-2-9	SALT TOLERANT PLANTS AND HALOPHYTES RESEARCH UNITS (RUMAIS)	200	200	200					
NAR-2-10	HONEY BEE RESEARCH UNIT (SALALAH)	140	140	140					
NAR-2-11	HONEY BEE RESEARCH UNIT (SALALAH)	55	55	55					
NAR-2-12	HONEY BEE RESEARCH UNIT (JEMMAH)	50	50	50					
NAR-2-13	DATE PALM RESEARCH UNIT (RUMAIS)	800	800	800					
NAR-3	DEVELOPMENT AND ESTABLISHMENT OF EXPERIMENTAL FARMS AND NURSERIES	1,840	1,840	1,840					
NAR-3-1	DEVELOPMENT OF ARABIC COFFEE EXPERIMENTAL FARM IN SALALAH	135	135	135					
NAR-3-2	DEVELOPMENT OF NURSERIES AT RUMAIS AND BARKA	220	220	220					
NAR-3-3	DEVELOPMENT OF NURSERIES AT SOHAR	100	100	100					
NAR-3-4	DEVELOPMENT OF NURSERIES IN INTERIOR	300	300	300					
NAR-3-5	DEVELOPMENT OF NURSERIES IN SOUTHERN REGION	100	100	100					
NAR-3-6	DEVELOPMENT OF NURSERIES AT WADI QURIYAH	115	115	115					
NAR-3-7	DEVELOPMENT OF NURSERIES AT HUSANDAH	70	70	70					
NAR-3-8	DEVELOPMENT OF NURSERIES AT SHARQIYA								
NAR-3-9	DEVELOPMENT OF NURSERIES AT DHARIRA								
NAR-4	FORESTRY-IMPROVEMENT PROGRAM	1,000	1,000	1,000					
NAR-5	ESTABLISHMENT OF LOCUST SURVEY AND CENTRAL UNIT (RUMAIS, ALL REGION)	1,000	1,000	1,000					
NAR-6	SOIL SURVEYS	800	800	800					
TOTAL	DEVELOPMENT BUDGET TOTAL	9,625	9,625	9,625					

Table 5.2.23 Budget of Agricultural Extension Sector by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL STATE GENERAL BUDGET (1000000)			SHARED		PRIVATE	SELF FINANCE	OTHERS	REMARKS
		BUDGET (1000000)	MAF	PAMAP	OBAF	ODB				
NAE-1	IMPROVEMENT AND DEVELOPMENT OF EXTENSION CENTERS AND FACILITIES	3,520	3,520							
NAE-1-1	ESTABLISHMENT OF EXTENSION CENTERS IN REMOTE AREA	400	400							
NAE-1-2	IMPROVEMENT OF EXTENSION CENTER FACILITIES	1,620	1,620							
NAE-1-3	DEVELOPMENT OF AGRICULTURAL TECHNOLOGY INFORMATION UNITS (ATIU)	1,500	1,500							
NAE-2	ESTABLISHMENT OF DEVELOPMENT SUPPORT COMMUNICATION CENTER (DSCC)	1,190	1,190							
NAE-3	TRAINING OF RESEARCHERS, EXTENSION STAFF AND STATISTICS STAFF	1,503	1,503							
NAE-4	INTENSIVE EXTENSION GUIDANCE PROGRAM	7,910	7,910							
NAE-4-1	SUPPORTING KEY FARMER EXTENSION PROGRAM	1,500	1,500							
NAE-4-2	DATE PALM REHABILITATION & IMPROVEMENT PROGRAM	5,910	5,910							
NAE-4-3	PROVISION OF INPUTS FOR EXPERIMENTAL PURPOSES	500	500							
TOTAL	DEVELOPMENT BUDGET TOTAL	14,123	14,123							

Table 5.2.24 Budget of Agricultural Production Sector by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL STATE GENERAL BUDGET (1000000)			SHARED WITH PRIVATE		PRIVATE	SELF FINANCE	OTHERS	REMARKS
		TOTAL BUDGET (1000000)	TOTAL	MAF	PAMAP	OBAF				
NAR-1	COLLECTION AND ORGANIZATION OF AGRICULTURAL STATISTICS	1,360	1,360							
NAR-1-1	AGRICULTURAL CENSUS	700	700							
NAR-1-2	ANNUAL UPDATE OF IMPORTANT AGRICULTURAL STATISTICS	660	660							
NAR-2	AGRICULTURAL EXHIBITION AND FESTIVAL	700	700							
NAR-2-1	INTERNATIONAL AGRICULTURE AND FOOD EXHIBITION	450	450							
NAR-2-2	DOMESTIC AGRICULTURAL FESTIVAL	250	250							
NAR-3	NATIONAL PROJECT FOR PLANT PROTECTION AND AERIAL SPRAY	5,000	5,000							
NAR-4	AGRICULTURAL TECHNOLOGY TRANSFER PROJECT TO FARMERS	5,000	5,000							
NAR TOTAL		12,060	12,060							
NAR-1	DEVELOPMENT & IMPROVEMENT OF PLANT QUARANTINE	900	900							
TOTAL	DEVELOPMENT BUDGET TOTAL	12,960	12,960							

Table 5.2.25 Budget of Livestock Sector by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO.	TOTAL COST (1000R0)	GENERAL BUDGET (1000R0)			PUBLIC SHARE H.	PRIVATE FINANCE	OTHERS	REMARKS
				MAF	PARAP	OPAF				
NLL-1	Rangeland Revegetation Project in Southern Region		2,335	2,332						
NLL-1-1	Establishment of Rangeland Management	A	470	352						
NLL-1-2	Grazing Control	B	2,165	2,000	165			118	UNDP (FAO)	
NLL-2	Animal Health & Disease Control Project		18,425	18,425						
NLL-2-1	Development of New Quarantines	A	1,975	1,975						
NLL-2-1	Animal Clinics Improvements	A	1,128	1,128						
NLL-2-2	Laboratory Development	A	669	669						
NLL-2-3	CCPP Vaccine Development	C	90	90						
NLL-2-4	National Vaccination	A	8,882	8,882						
NLL-2-5	Supplies of Veterinary Equipment	B	3,000	3,000						
NLL-2-6	Brucellosis Control in South	B	821	821						
NLE-1	Livestock Extension Development		482	482						
NLE-1-1	Extension Method Improvement	A	150	150						
	- Demonstration of Using Equipment									
	- Visual Extension									
	- Establishment of Demonstration Unit									
NLE-1-2	Training Center Development	B	332	332						
NLR-1	Livestock Research Development		4,050	4,050						
NLR-1-1	Development of Livestock Research Centers	A	2,020	2,020						
NLR-1-2	Research Centers Management Consultancy	A	2,030	2,030						
NLM-1	Livestock Marketing Improvement Project		9,332	5,285	1,166		3,510			
NLM-1-1	Company for Livestock Products	A	2,932	1,515			1,466			
NLM-1-2	Cattle Fattening	B	310	180			130		* (979) Marketing COMPANY	
NLM-1-3	Cut Meat Processing	C	974	487			487		* (537) Marketing COMPANY	
NLM-1-4	Milk Collecting and Processing	B	2,322	1,161			1,161		* (1,162) Marketing COMPANY	
NLM-1-5	Hides and Skins Development	C	384	192			192		* (262) Marketing COMPANY	
NLM-1-6	Cattle Destocking Subsidy	A	2,500	1,500	1,000				* (1,500) Marketing COMPANY	
NLM-1-7	Marketing Promotion	C	410	170	166		74		* (93) Marketing COMPANY	
NLL-3	Livestock Input Company Project	B	6,795	1,359		3,398	2,039			
NLL-4	Small Farm Development Support Project		15,512	15,285						
NLL-4-1	Smallholder Poultry Production	A	3,355	3,355						
NLL-4-2	Intensive Livestock Production	A	6,597	6,370	227					
NLL-4-3	A.I. Services for Dairy Cow	B	60	60						
NLL-5	Livestock Specialised Services		1,222	1,222						
NAA-1-1	Livestock Census	B	524	524						
NLL-5-1	National Disease Survey	B	55	55						
NLM-2	Marketing Survey	A	143	143						
NLL-5-2	Consultancy Services (Study)	A	500	500						
Total		**	57,803	46,381	392	3,398	5,549	118		

NOTE: *The government will subsidize the amount through COMPANY.

** This amount means the total required cost for the implementation of project. Governmental share is total MAF budget(46,381) and PARAP budget(1,166).

Table 5.2.26 Budget of Distribution Sector by Finance Source - 5-Year Plan

DESCRIP PROJECT NUMBER	NAME OF PROJECT/PROGRAM	PRIO	TOTAL BUDGET (1000RO)	TOTAL	STATE GENERAL BUDGET			SHARED WITH PRIVATE	SELF	OTHERS	REMARKS
					MAF	PAPAP	ODB				
ND-1	NM-1 ESTABLISHMENT OF WHOLESALE MARKET (STUDY)	A	322	322		322					
	NM-1-1 STUDY ON ESTABLISHING WHOLESALE MARKET		210	210		210					
	NM-1-2 STUDY ON EXPANION OF DISTRIBUTION VOLUME IN PAPAP		33	33		33					
	NM-1-3 IMPLEMENTATION ON EXPANION OF DISTRIBUTION VOLUME IN PAPAP		-	-		-					
	NM-1-4 TRAINING STAFFS OF PAPAP FOR IMPLEMENTATION OF THE PILOT		79	79		79					
	NM-2 PILOT WHOLESALE MARKET	A	524	524		524					
	NM-2-1 OPERATION OF PILOT WHOLESALE MARKET (SUPPORT BY CONSULTANT)		216	216		216					
	NM-2-2 DETAIL DESIGN ON WHOLESALE MARKET		308	308		308					
ND-2	NM-3 CONSTRUCTION AND OPERATION OF WHOLESALE MARKET	A	2,810	2,810		2,810					
	NM-3-1 CONSTRUCTION OF WHOLESALE MARKET		2,526	2,526		2,526					
	PHASE-1 MUTTRAH		2,526	2,526		2,526					
	NM-3-2 CONSTRUCTION OF WHOLESALE MARKET (SUPERVISION BY CONSULTANT)		128	128		128					
	PHASE-1 MUTTRAH		128	128		128					
	NM-3-8 TRAINING STAFFS FOR OPERATION OF WHOLESALE MARKETS (SUPPORT)		158	158		158					
	SUBTOTAL		3,856	3,856		3,856					
	ND-2		A	210	210		210				
ND-3	NM-4 BASIC DATA COLLECTING PROGRAM	A	98	98		98					
	NM-4-1 BASIC DATA COLLECTING PROGRAM (STUDY)		43	43		43					
	NM-4-2 BASIC DATA COLLECTING PROGRAM (EQUIPMENT)		47	47		47					
	NM-4-3 BASIC DATA COLLECTING PROGRAM (SUPPORT BY CONSULTANT)		26	26		26					
	NM-4-4 PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST		26	26		26					
	NM-4-5 INTRODUCTION FOR PRICING POLICY (STUDY)		28	28		28					
	NM-5 PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST (SUPPORT)	A	144	144		144					
	NM-6 MEASURES FOR ADJUSTMENT OF SUPPLY AND DEMAND (STUDY)	A	60	60		60					
SUBTOTAL		444	444		444						
ND-3		A	150	150		150					
ND-4	NM-7 ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (STUDY)	A	1,060	1,060		1,060					
	NM-8 ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS		60	60		60					
	NM-8-1 ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (SUPPORT)		60	60		60					
	NM-8-2 ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (EQUIPMENT)		1,000	1,000		1,000					
SUBTOTAL		1,220	1,220		1,220						
ND-4	NM-9 STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAPAP (STUDY)	A	468	468		468					
	NM-10 STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAPAP	A	9,609	9,609		9,609					
SUBTOTAL		10,077	10,077		10,077						
TOTAL	DEVELOPMENT BUDGET TOTAL		15,397	15,397		15,397					

Table 5.2.27 Budget of Agricultural Produce Processing Sector
by Finance Source - 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000R0)	STATE GENERAL BUDGET			SHARED WITH PRIVATE		OTHERS	REMARKS
			TOTAL	MAF	PAMAP	OBAF	ODB		
NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	10,100	5,100	8,100			3,800	2,000	
NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	5,833	1,134	1,134			2,834	1,700	
NP-3	Establishment of Pickling and Vinegar-Processing Plant	1,814	1,814	1,814					
NP-4	Establishment of Coconut-Processing Plant	4,738	2,636	2,636			1,315	789	
	Coconut Farm	2,100	2,100						
	Coconut-Processing Plant	2,638	500	500			1,315	789	
TOTAL	DEVELOPMENT BUDGET TOTAL	28,112	10,474	10,474			7,149	4,489	

Table 5.2.28 Budget of Inter-Sectoral Projects by Finance Source
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000R0)	STATE GENERAL BUDGET			SHARED WITH PRIVATE		OTHERS	REMARKS
			TOTAL	MAF	PAMAP	OBAF	ODB		
NI-1	Integrated Agricultural Development Project in Nejd 1) Pilot Farm (50ha) 2) Main Development Project (350 ha out of 450 ha)	13,242	13,242	13,242					
		1,855	1,855	1,855					
		11,387	11,387	11,387					
NI-2	Improvement and Maintenance of MAF Facilities 1) Ministry Building 2) Office Building for Directorate General of Agriculture in 6 Regions 3) Separate Consolidated Allocation for All Consultancies	16,991	16,991	16,991					
		5,191	5,191	5,191					
		7,800	7,800	7,800					
		4,000	4,000	4,000					
OI-1	Citizen's Compensation against Natural Crisis	1,500	1,500	1,500					
OI-2	Master Plan for Development of Date Palm Cultivation	800	800	800					
TOTAL	DEVELOPMENT BUDGET TOTAL	32,333	32,333	32,333					

Table 5.2.29 Time Schedule of Entire Agricultural Development

- 5-Year Plan

SECTOR	PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (10000)	EXECUTING AGENCY	SCHEDULE			
					1991	1992	1993	1994
Irrigation and Dam	NU-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System	19,000	MAF				
	NU-2	Subsidy for New Irrigation System Project	16,250	MAF, OBARF				
	NU-3	Leak Framework for Agricultural Water Use	10,110	MAF				
	NU-4	Recharge Dams	48,025	MAF				
	NU-5	Sub-surface (Underground) Dams	2,500	MAF				
	NU-6	AFB	29,670	MAF				
	NU-7	Wells	9,000	MAF				
	NU-8	Springs	1,959	MAF				
	NU-9	Erosion Control and Protection of Agricultural Land against Floods	3,670	MAF				
	NU-10	Survey and Monitoring	4,264	MAF				
Agricultural Research	NAR-1	Support for Agricultural Research Stations	9,025	MAF				
	NAR-2	Establishment of New Research Units and Laboratories	2,710	MAF				
	NAR-3	Development and Establishment of Experimental Farms and Nurseries	3,075	MAF				
	NAR-4	Development and Establishment of Experimental Farms	1,040	MAF				
	NAR-5	Forestry-Improvement Program	1,000	MAF				
	NAR-6	Establishment of Local Survey and Central Unit Soil Surveys	1,000	MAF				
Agricultural Extension	NRE-1	Improvement and Development of Extension Centers and Facilities	14,122	MAF				
	NRE-2	Establishment of Development Support Communication Center (DSCC)	3,520	MAF				
	NRE-3	Training of Researchers, Extension Staff and Statistics Staff	1,190	MAF				
	NRE-4	Intensive Extension Guidance Program	1,503	MAF				
Agricultural Production	NAR-1	Collection and Organization of Agricultural Statistics	7,318	MAF				
	NAR-2	Agricultural Exhibitions and Festivals	12,960	MAF				
	NAR-3	National Project for Plant Protection and Aerial Spraying	1,360	MAF				
	NAR-4	Agricultural Technology Transfer to Farmers Project	700	MAF				
	NAR-5	Development and Improvement of Plant Quarantine	5,000	MAF				
	NAR-6	Development and Improvement of Plant Quarantine	300	MAF				
	NAR-7	Development and Improvement of Plant Quarantine	47,548	MAF				
Livestock	NLU-1	Rangeland Revegetation Project in Southern Region	2,352	MAF, OBARF				
	NLU-2	Animal Health and Disease Control Project	16,425	MAF				
	NLU-3	Livestock Extension Development Project	482	MAF				
	NLU-4	Livestock Research Development Project	4,000	MAF				
	NLU-5	Livestock Marketing Improvement Project	6,371	MAF, PAHAP, PRIVATE				
Distribution	NLU-1	Livestock Inbred Company Project	1,320	MAF, PRIVATE				
	NLU-2	Small Farm Development Support Project	13,225	MAF, OBARF				
	NLU-3	Livestock Specialized Services Program	1,252	MAF				
	NLU-4	Establishment of Wholesale Market	15,387	MAF				
	NLU-5	Supply and Demand Forecast of Agricultural Produce	3,656	PAHAP				
Agricultural Produce Processing	ND-1	Establishment of Shipping Organization for Farmers	414	PAHAP				
	ND-2	Establishment of Shipping Organization for Farmers	1,220	PAHAP				
	ND-3	Fertilization of PAHAP	10,077	PAHAP				
	ND-4	Fertilization of PAHAP	10,474	PAHAP				
Agricultural Produce Processing	NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services	5,100	CONSULTANT COMPANY				
	NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes	1,134	CONSULTANT COMPANY				
	NP-3	Establishment of Pickling and Vinogar-Processing Plant	1,614	CONSULTANT COMPANY				
	NP-4	Establishment of Coconut-Processing Plant	2,626	CONSULTANT COMPANY				
Inter-Sectoral	NI-1	Integrated Agricultural Development Project in Noid	32,333	MAF				
	NI-2	Improvement and Maintenance of MAF Facilities	13,242	MAF				
	NI-3	Artificial Rainfall Project	16,991	MAF				
	OI-1	Citizen's Compensation against Natural Crisis	0	MAF				
Total	OI-2	Master Plan for Development of Date Palm Cultivation	1,500	MAF				
			600	MAF				
Total			277,976					

Table 5.2.30 Time Schedule of Irrigation and Dam Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET	EXECUTING AGENCY					SCHEDULE												
			1981	1982	1983	1984	1985	1981	1982	1983	1984	1985								
NW-1	Improvement of Irrigation System and Centrally-Controlled Water-Distribution System Study Phase(P/S,F/S) Pilot Project	19,800	MAF																	
NW-2	Subsidy for New Irrigation System Project for 30,000ha	16,250	MAF, OBAR																	
NW-3	Legal Framework for Agricultural Water Use	170	MAF																	
NW-4	Recharge Dams	48,025	MAF																	
NW-4-1	Groundwater-Recharge Scheme Study Phase	3,750	MAF																	
NW-4-2	Construction Phase Maintenance and Improvement of Existing and Newly Constructed Dams	38,200	MAF																	
NW-4-3	Recharged Water Effective Use Pilot Project(Study)	250	MAF																	
NW-4-4	Identification of New Groundwater-Recharge Schemes	3,500	MAF																	
NW-5	Sub-Surface (Underground) Dams Reconnaissance Study	75	MAF																	
	Preliminary Study	150	MAF																	
	Feasibility Study	300	MAF																	
	Pilot-Project(Construction)	1,900	MAF																	
	Observation and Monitoring	75	MAF																	
NW-6	Arlaj	29,670																		
NW-6-1	Repair and Maintenance of Arlaj	24,000	MAF																	
NW-6-2	Distribution System Improvement Pilot Project in Oasis(Study)	750	MAF																	
NW-6-3	Improvement and Maintenance of Major Arlaj Study	920	MAF																	
	Construction	4,000	MAF																	
NW-7	Wells	9,000	MAF																	
NW-7-1	Subsidy for Repair of Existing Open Wells	3,000	MAF																	
NW-7-2	Assistant Wells for Arlaj	6,000	MAF																	
NW-8	Springs	1,969																		
NW-8-1	Improvement of Springs	1,750	MAF																	
NW-8-2	Annual Maintenance of Open Channel for Springs	219	MAF																	
NW-9	Erosion Control and Protection of Agricultural Land against Floods	3,870																		
	Study Phase	270	MAF																	
	Construction Phase	3,600	MAF																	
NW-10	Survey and Monitoring	4,264																		
NW-10-1	Long-term Plan for Aerial Photography and Ortho-photo Mapping	1,118	MAF																	
NW-10-2	Establishment and Operation of Hydrological Monitoring Network for Recharge Dams	3,146	MAF																	
TOTAL	DEVELOPMENT BUDGET TOTAL	135,518																		

Table 5.2.31 Time Schedule of Agricultural Research Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL EXECUTING BUDGET AGENCY	SCHEDULE				
			1991	1992	1993	1994	1995
		(1000RD)					
NAR-1	SUPPORT FOR AGRICULTURAL RESEARCH STATIONS	2,710					
NAR-1-1	AGRICULTURAL RESEARCH FACILITIES AT RUMAH	600					
NAR-1-2	AGRICULTURAL RESEARCH FACILITIES AT JEMAH	600					
NAR-1-3	AGRICULTURAL RESEARCH FACILITIES AT SALALAH	676					
NAR-1-4	AGRICULTURAL RESEARCH FACILITIES AT SOHAR	600					
NAR-1-5	AGRICULTURAL RESEARCH FACILITIES AT SHAGIYA	235					
NAR-1-6	AGRICULTURAL RESEARCH FACILITIES AT DHARIRA						
NAR-2	ESTABLISHMENT OF NEW RESEARCH UNITS AND LABORATORIES	3,075					
NAR-2-1	AGRICULTURAL MACHINERY RESEARCH UNIT AT RUMAH	475					
NAR-2-2	TOXICOLOGY LABORATORY (RUMAH)	230					
NAR-2-3	SEED AND TUBER PRODUCTION RESEARCH UNIT (RUMAH)	70					
NAR-2-4	CENTRAL SOIL PLANT AND WATER ANALYSIS LABORATORY (RUMAH)	600					
NAR-2-5	LIBRARY AND DOCUMENTATION CENTER (RUMAH)	240					
NAR-2-6	PLANT WATER REQUIREMENT DETERMINATION UNIT (SALALAH)	100					
NAR-2-7	MEDICAL AND PERFUME PLANT RESEARCH UNIT (SALALAH)						
NAR-2-8	DISEASE AND PEST FORECASTING UNIT (RUMAH)	100					
NAR-2-9	SALT TOLERANT PLANTS AND HALOPHYTES RESEARCH UNITS (RUMAH)	200					
NAR-2-10	HONEY BEE LABORATORY (RUMAH)	140					
NAR-2-11	HONEY BEE RESEARCH UNIT (SALALAH)	65					
NAR-2-12	HONEY BEE RESEARCH UNIT (JEMAH)	50					
NAR-2-13	DAPLE PALM RESEARCH UNIT (RUMAH)	300					
NAR-3	DEVELOPMENT AND ESTABLISHMENT OF EXPERIMENTAL FARMS AND NURSERIES	1,040					
NAR-3-1	DEVELOPMENT OF ARABIC COFFEE EXPERIMENTAL FARM IN SALALAH	135					
NAR-3-2	DEVELOPMENT OF NURSERIES AT RUMAH AND BARKA	220					
NAR-3-3	DEVELOPMENT OF NURSERIES AT SOHAR	100					
NAR-3-4	DEVELOPMENT OF NURSERIES IN INTERIOR	300					
NAR-3-5	DEVELOPMENT OF NURSERIES IN SOUTHERN REGION	100					
NAR-3-6	DEVELOPMENT OF EXPERIMENTAL FARM AT WADI QURIYAT	115					
NAR-3-7	DEVELOPMENT OF EXPERIMENTAL FARM AT MUSANDAH	70					
NAR-3-8	DEVELOPMENT OF EXPERIMENTAL FARM AT SHAGIYA						
NAR-3-9	DEVELOPMENT OF EXPERIMENTAL FARM AT DHARIRA						
NAR-4	FORESTRY-IMPROVEMENT PROGRAM	1,000					
NAR-5	ESTABLISHMENT OF LOCUST SURVEY AND CENTRAL UNIT (RUMAH'S ALL REGION)	1,000					
NAR-6	SOIL SURVEYS	800					
TOTAL	DEVELOPMENT BUDGET TOTAL	9,625					

Table 5.2.32 Time Schedule of Agricultural Extension Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	EXECUTING AGENCY	SCHEDULE				
				1991	1992	1993	1994	1995
NAE-1	IMPROVEMENT AND DEVELOPMENT OF EXTENSION CENTERS AND FACILITIES	3,520						
NAE-1-1	ESTABLISHMENT OF EXTENSION CENTERS IN REMOTE AREA	400	MAF					
NAE-1-2	IMPROVEMENT OF EXTENSION CENTER FACILITIES	1,620	MAF					
NAE-1-3	DEVELOPMENT OF AGRICULTURAL TECHNOLOGY INFORMATION UNITS (ATIU)	1,500	MAF					
NAE-2	ESTABLISHMENT OF DEVELOPMENT SUPPORT COMMUNICATION CENTER (DSCC)	1,190	MAF					
NAE-3	TRAINING OF RESEARCHERS, EXTENSION STAFF AND STATISTICS STAFF	1,503	MAF					
NAE-4	INTENSIVE EXTENSION GUIDANCE PROGRAM	7,910						
NAE-4-1	SUPPORTING KEY FARMER EXTENSION PROGRAM	1,500	MAF					
NAE-4-2	DATE PALM REHABILITATION & IMPROVEMENT PROGRAM	5,910	MAF					
NAE-4-3	PROVISION OF INPUTS FOR EXPERIMENTAL PURPOSES	500	MAF					
TOTAL	DEVELOPMENT BUDGET TOTAL	14,133						

Table 5.2.33 Time Schedule of Agricultural Production Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	EXECUTING AGENCY	SCHEDULE				
				1991	1992	1993	1994	1995
NAA-1	COLLECTION AND ORGANIZATION OF AGRICULTURAL STATISTICS	1,360						
NAA-1-1	AGRICULTURAL CENSUS	700	MAF					
NAA-1-2	ANNUAL UPDATE OF IMPORTANT AGRICULTURAL STATISTICS	660	MAF					
NAA-2	AGRICULTURAL EXHIBITION AND FESTIVAL	700						
NAA-2-1	INTERNATIONAL AGRICULTURE AND FOOD EXHIBITION	450	MAF					
NAA-2-2	DOMESTIC AGRICULTURAL FESTIVAL	250	MAF					
NAA-3	NATIONAL PROJECT FOR PLANT PROTECTION AND AERIAL SPRAY	5,000	MAF					
NAA-4	AGRICULTURAL TECHNOLOGY TRANSFER PROJECT TO FARMERS	5,000	MAF					
	NAA TOTAL	12,060						
NAQ-1	DEVELOPMENT & IMPROVEMENT OF PLANT QUARANTINE	900	MAF					
TOTAL	DEVELOPMENT BUDGET TOTAL	12,960						

Table 5.2.34 Time Schedule of Livestock Sector - 5-Year Plan

Number of Project	Name of the Project	Project Period	TIMING				
			1991	1992	1993	1994	1995
NLL-1	Rangeland Revegetation Project in Southern Region						
NLL-1-1	① Establishment of Rangeland Management	2					
NLL-1-2	② Grazing Control	5					
NLL-2	Animal Health & Disease Control Project						
NLQ-1	① Development of New Quarantines	5					
NLL-2-1	② Animal Clinics Improvements	5					
NLL-2-2	③ Laboratory Development	5					
NLL-2-3	④ CAPP Vaccine Development	3					
NLL-2-4	⑤ National Vaccination	5					
NLL-2-5	⑥ Supplies of Veterinary Equipment	5					
NLL-2-6	⑦ Brucellosis Control in South	5					
NLE-1	Livestock Extension Development						
NLE-1-1	① Extension Method Improvement	5					
	② Demonstration of Using Equipment						
	③ Visual Extension						
NLE-1-2	④ Establishment of Demonstration Unit						
	⑤ Training Center Development						
NLR-1	Livestock Research Development						
NLR-1-1	① Development of Livestock Research Centers	5					
NLR-1-2	② Research Centers Management Consultancy	5					
NLM-1	Livestock Marketing Improvement Project						
NLM-1-1	① Company for Livestock Products	5					
NLM-1-2	② Cattle Fattening	5					
NLM-1-3	③ Cut Meat Processing	2					
NLM-1-4	④ Milk Collecting and Processing	3					
NLM-1-5	⑤ Hides and Skins Development	1					
NLM-1-6	⑥ Cattle Destocking Subsidy	5					
NLM-1-7	⑦ Marketing Promotion	5					
NLL-3	Livestock Input Company Project	2					
NLL-4	Small Farm Development Support Project						
NLL-4-1	① Smallholder Poultry Production	5					
NLL-4-2	② Intensive Livestock Production	5					
NLL-4-3	③ A.I. Services for Dairy Cow						
NLL-5	Livestock Specialized Services	1					
NAA-1-1	① Livestock Census	1					
NLL-5-1	② National Disease Survey	5					
NLM-2	③ Marketing Survey	1					
NLL-5-2	④ Consultancy Services (Study)	5					

Table 5.2.35 Time Schedule of Distribution Sector - 5-Year Plan

DESCRIPTION NUMBER	PROJECT NUMBER	NAME OF PROGRAM/PROJECT	TOTAL BUDGET (RO 1,000)	EXECUTING AGENCY					SCHEDULE					
				1991	1992	1993	1994	1995	1991	1992	1993	1994	1995	
ND-1	NM-1	ESTABLISHMENT OF WHOLESALE MARKET (STUDY)	322											
	NM-1-1	STUDY ON ESTABLISHING WHOLESALE MARKET	210	PAMAP										
	NM-1-2	STUDY ON EXPANSION OF DISTRIBUTION VOLUME IN PAMAP	33	PAMAP										
	NM-1-3	IMPLEMENTATION ON EXPANSION OF DISTRIBUTION VOLUME IN PAMAP	-	PAMAP										
	NM-1-4	TRAINING STAFFS OF PAMAP FOR IMPLEMENTATION OF THE PILOT	79	PAMAP										
	NM-2	PILOT WHOLESALE MARKET	524											
	NM-2-1	OPERATION OF PILOT WHOLESALE MARKET (SUPPORT BY CONSULTANT)	216	PAMAP										
	NM-2-2	DETAIL DESIGN ON WHOLESALE MARKET	308	PAMAP										
	NM-3	CONSTRUCTION AND OPERATION OF WHOLESALE MARKET	2,810											
	NM-3-1	CONSTRUCTION OF WHOLESALE MARKET	2,526	PAMAP										
	NM-3-2	PHASE-1 MUTTRAH	126	PAMAP										
	NM-3-3	CONSTRUCTION OF WHOLESALE MARKET (SUPERVISION BY CONSULTANT)	156	PAMAP										
	NM-3-8	PHASE-1 MUTTRAH	156	PAMAP										
		TRAINING STAFFS FOR OPERATION OF WHOLESALE MARKETS (SUPPORT)												
	SUBTOTAL		3,656											
ND-2	NM-4	BASIC DATA COLLECTING PROGRAM	240											
	NM-4-1	BASIC DATA COLLECTING PROGRAM (STUDY)	98	PAMAP										
	NM-4-2	BASIC DATA COLLECTING PROGRAM (EQUIPMENT)	43	PAMAP										
	NM-4-3	BASIC DATA COLLECTING PROGRAM (SUPPORT BY CONSULTANT)	47	PAMAP										
	NM-4-4	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST	26	PAMAP										
	NM-4-5	INTRODUCTION FOR PRICING POLICY (STUDY)	26	PAMAP										
ND-3	NM-5	PREPARATION & PUBLICATION OF SUPPLY AND DEMAND FORECAST (SUPPORT)	144	PAMAP										
	NM-6	OPERATION FOR PREPA. & PUBL. OF SUPPLY AND DEMAND FORECAST		PAMAP										
	NM-6	MEASURES FOR ADJUSTMENT OF SUPPLY AND DEMAND (STUDY)	60	PAMAP										
		SUBTOTAL		444										
	NM-7	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (STUDY)	160	PAMAP										
	NM-8	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS	1,060											
ND-4	NM-8-1	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (SUPPORT)	60	PAMAP										
	NM-8-2	ESTABLISHMENT OF SHIPPING ORGANIZATION FOR FARMERS (EQUIPMENT)	1,000	PAMAP										
		SUBTOTAL		1,220										
	NM-9	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAMAP (STUDY)	468	PAMAP										
	STRENGTH PROGRAM FOR MAIN DISTRIBUTION CHANNELS IN PAMAP	9,609	PAMAP											
	SUBTOTAL		10,077											
TOTAL		DEVELOPMENT BUDGET TOTAL	15,387											

Table 5.2.36 Time Schedule of Agricultural Produce Processing Sector
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	EXECUTING AGENCY	SCHEDULE				
				1991	1992	1993	1994	1995
NP-1	Establishment of Private Company for Agro-Industry and Supply of Agricultural Inputs and Services 1) F/S and D/D for the establishment of company (study) 2) Construction, introduction of equipments, etc.	5.100	Consultant Company					
NP-2	Establishment of Agro-Industrial Complex for Processing of Dates, Limes and Tomatoes 1) F/S and D/D of dates processing plants (study) 2) Construction of dates processing plants	1.134	Consultant Company					
NP-3	Establishment of Pickling and Vinegar-Processing Plant 1) D/D of pickling and vinegar pilot plants (study) 2) Construction of pilot plants	1.614	Consultant Company					
NP-4	Establishment of Coconut-Processing Plant Coconut Farm Coconut-Processing Plant 1) D/D of coconuts processing plant (study) 2) Construction of coconuts processing plant	2.626 2.100 526	MAF Consultant Company					
TOTAL	Coconut-Processing Plant	10.474						

Table 5.2.37 Time Schedule of Inter-Sectoral Projects
- 5-Year Plan

PROJECT NUMBER	NAME OF PROJECT/PROGRAM	TOTAL BUDGET (1000RO)	EXECUTING AGENCY	SCHEDULE				
				1991	1992	1993	1994	1995
NI-1	Integrated Agricultural Development Project in Nejd 1) Pilot Farm (50ha) 2) Main Development Project (950 ha out of 450 ha)	13.242 1.655 11.587	MAF MAF					
NI-2	Improvement and Maintenance of MAF Facilities 1) Ministry Building 2) Office Building for Directorate General of Agriculture in 6 Regions 3) Separate Consolidated Allocation for All Consultancies	16.991 5.191 7.800 4.000	MAF MAF MAF MAF					
OI-1	Citizen's Compensation against Natural Crisis	1.500	MAF					
OI-2	Master Plan for Development of Date Palm Cultivation	600	MAF					
TOTAL	DEVELOPMENT BUDGET TOTAL	92.393						